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ART. 1.—NORTHERN ARKANSAS AND ITS NATURAL ADVANTAGES.

No part of the United States—climate, soil, and the facilities of getting the products of the earth to market considered—affords so many inducements for the poor man, or one with moderate means, as the northern portion of Arkansas. In using the word northern, I design it in contra distinction from the southern portion, which is better suited for cotton planters and men of great means. A careful survey of the map will at once demonstrate how abundantly it is supplied with lines of small streams; the river navigable for boats, the small streams capable of driving any kind of machinery.

The great river of northern Arkansas is White river, and when I venture the assertion that it is naturally a better river for navigation than the Ohio, my readers will doubtless at the first blush note me beside myself. But I will prove my assertion without even disparaging the Ohio, or quoting the eccentric and gifted orator of Roanoke, who declared it "dry one half the year and frozen the other."

It is a notorious fact, that for some months in every year boats of even two feet draught find much difficulty in going from Cairo to Louisville. White river, from its mouth to the junction of Black river with it, a distance of three hundred and fifty miles, never has less than three feet of water, and but one bar on which the water gets that low, and for many seasons affords four feet the year round. The Ohio has the advantage of having had thousands appropriated upon it, and the removal of many snags. White river rolls on in silent majesty, just as God made it, the hand of man never yet having done the first thing for it; not one dollar has been spent upon it.

Of its tributaries Black river is the most important, watering the counties of Independence, Jackson, Lowena and Randolph. It is navigable for steamboats nine months in the year to Pocahontas, the county seat of Randolph, a distance of some one hundred miles, and the expenditure of a few thousand dollars would make it navigable the entire year. Little Red river waters the counties of Van Buren and White, and is navigable for steamboats some miles above its mouth. One of its branches is somewhat noted, being the one on which the Whetstone and Cole families reside, and having the soubriquet of

the "Devil's Fork." Currant river waters Randolph, and empties into Black, it is navigable for flatboats, as are Spring river and Eleven Points, both emptying into Black.

Steamboats drawing three feet water could ascend White river as far up as Batesville, a distance of four hundred miles from its mouth, every day in the year, were $20,000 judiciously expended upon its improvement, and I am pleased to state that the people interested are becoming aroused to the importance of this work. A recent internal improvement convention, holden at Batesville, took important steps to awake public attention to its vast importance. Ceasing to call on Hercules, to hope for aid from the General Government, the people are going to put their own shoulders to the wheel. That beautiful nest egg, the bequest to us from the Congress of 1841, in the shape of the five hundred thousand acres donation, will give us a fair start, and then individual enterprise and individual aid will do the rest. Above Batesville for more than one hundred and fifty miles, there is flatboat navigation, and with money good steamboat navigation may be had. Our climate is mild; ice is never with us an obstruction to navigation. Our market is New Orleans, and when we have water we can leave.

Our soil is of every description; the bottom lands of our river are of the very richest character, yielding from fifty to eighty bushels of corn to the acre. Cotton grows well: in Jackson, Monroe, St. Francis, and all the northeastern counties, the yield is from one thousand to two thousand pounds to the acre. Independence, Lowena, Randolph, and Van Buren, grow wheat well; all the western counties are well adapted to all kinds of small grain. In most of the counties tobacco does well. It is a fine country for stock; horses, mules and hogs can be raised in any numbers and with as little cost as in any part of the United States of the same latitude.

The swamps and lowlands of Jackson, St. Francis and other counties, have a never failing supply of ash and cypress, and immense rafts are taken to New Orleans annually. White river, above Batesville, abounds with forests of pine, and any quantity of lumber can be procured.

The reader may ask why it is that such a country, possessing such advantages has been overlooked? When the nature of the American people is changed, I may possibly be enabled to answer. Restlessness is a predominant trait in our character,—a disposition to be ever going towards the setting sun. Men start to move, and for fear there is a better place just beyond them, are never satisfied until their means of travelling are exhausted, or they are brought to a stand by the Rocky mountains or the Pacific ocean.

The town of Batesville is one hundred and twenty miles from Memphis; of that distance about ninety miles is as level as any street in New Orleans, the road passing through the best of timber. A railroad would be made in yankee land through it in less time than you could say "Jack Robinson." The *progressive developments* of the age may do something towards it, but I fear it will be a long time first. I may as well mention the fact, that about equi-distant from Memphis and this place, but far to the right of the road, herds of buffaloes are

still to be found. Every season several are killed; the lakes and swamps are impassable for men and horses, and the buffaloes are there in a great measure protected. We have generally much game in this region, though at this time, from unknown causes, it is scarce. Our rivers abound in delightful fish,—trout that would even make "York's tall son's" mouth to water.

N., OF ARKANSAS.

Art. II.—ESSAY WRITING, AND THE PRESS.

Quidquid præcipies; esto brevis: ut cito dicta
Percipiant animi dociles, teneantque fideles.—HOR.

IT is surprising how many books there are in the literature of every country, which are absolutely worthless, and how much unnecessary repetition and amplification there is in the *best* books in every language. Could the ideas worth preservation in the literature of any particular people, be separated from the unprofitable and useless weight of words in which they are generally clothed; it would astonish any one to see into what a small compass these ideas could be compressed. Under this process ponderous folios would sink into quartos, quartos into octavos, and the huge Bodleian could be accomodated in our modest studio. The "Excursion," we would make with Wordsworth's philosophic pedlar, would be much shorter, and the "Fairie Queene" would appear much more sylph-like in her proportions, growing "fine by degrees and beautifully less." We are among those who subscribe to the sentiment of the Grecian aphorism, "mega biblion, mega kakon," and have always had a horror for one, which is too large to be swallowed, or to lounge with upon a sofa, but requires to be laid in state upon your desk and carefully chewed and digested. Reading is with us a recreation and not a labor after learning, and the majority of mankind agree with us upon this point. Lord Bacon observes in one of his Essays that "Studies serve for delight, for ornament, and for ability." The mass of readers are among that class, both from inclination and from necessity, whose studies are "for delight." The world and its business, claims their time and energies, and when permitted to escape into the world of books, it is to read and enjoy, not to dispute or criticise, to pass a pleasant hour, and not to gather together materials for a book. The hewers of wood and drawers of water, who constitute a vast majority of the human race, can not afford to neglect the serious work of earning bread, to read such books as Narre's Memoirs of William Cecil, or Clarendon's History of the Rebellion. Lord Bacon, himself, is known to thousands, through his Essays, who have never dared to disturb the learned dust of the Novum Organum or De Augmentis Scientia, Utility, Progress and Fruit, together with inductive philosophy, these terms are familiarly associated in their minds with his name, but they gather their ideas of Bacon and his philosophy from reviews and biographies, like that of Basil Montague, and not from a perusal of his works, themselves, as we form our opinions of foreign countries from the reports of travelers who have visited

them. They content themselves with the Essays, wisely determining that he who can utter such sage precepts upon the most dissimilar subjects, upon Usury, upon Judicature, upon Studies, upon Gardening, upon Negotiating, would deal with equal cleverness with the Stagerite and Thomas Aquinas. Knowledge for the masses must be conveyed in as small a compass, and in a form as attractive as possible.

It is the boast of our age to have provided this knowledge for the people. Its most prominent feature, with all its material, activity, if we may use the expression, is the general diffusion of knowledge among the masses. Observe the character of the literature of England, the most enlightened nation on the globe. Its publications are not now immense folios, destined to grace the shelves of the scholar, alone, or falling still-born from the press. Periodical Literature monopolizes the talent of the land. Not that England has lost its scholars; for never has true, discriminating, philosophical and manly criticism been carried to greater perfection than by them of late years; but they feel the impetus and partake of the spirit of the age. The days of patronage from the great and wealthy are passed, and the mass is the Macænas of the age. Authors are obliged to court the popular favor, by following the popular taste. The consequence is that the Press teems with light social novels; the land is crowded with reviews, annuals and newspapers. Amidst this popular literature, the prevailing feature is its fitness for informing the common mind, and in effecting this object we give the greatest weight and importance to the Essays which constitute the gems of the reviews. To illustrate our idea, we think the influence of such works as Charles O'Malley, or Dombey & Son, on public morals or taste, weak and insignificant, compared to that exerted by the classical, chaste and powerful Essays of Macauley, Wilson, or Sidney Smith. Such writings as the latter, are suited to the wants of the people, conveying as much instructive matter as Compends and Encyclopædias, and rendered interesting and entertaining by the graces of rhetoric and the charms of scholarship. They are not text books for scholars, but agreeable companions for every one. Essayists have not built up a royal road to learning, but have decked the toilsome ascent with green borders and cooling shades. But a few individuals of the whole human race, may ever stand upon the highest summit of knowledge, yet tens of thousands may wander amidst the brilliant parterres of Periodical Literature which ornament the way-side, and pluck sweet flowers, lulled by falling waters and the hum of bees.

It is not only necessary that a people should have a literature, but that it should be adapted to their wants and capacities. No one can wonder at the faint glimmering of light—the crepusculum—in which Europe groped, even after the invention of Printing; who observes the issues of the press of those days, consisting of the labored, unprofitable disquisitions of the schoolmen, "cimini sectores," or the equally labored and more furious disputations of polemical divines. If intelligent people of the present day, neglect such works as Burton's Anatomy of Melancholy, or Adam Smith's Wealth of Nations, for lighter reading, we must conclude that these issues of the press could have found few readers among the boors and villeins of Germany. Dr. Johnson once

said, with his absurd dogmatism, that Demosthenes spoke to a nation of barbarians, that "the mass of every people must be barbarians, where there is no printing." But we say that there may be printing and no intelligence, and on the other hand, the highest degree of intelligence where a type was never seen. As an illustration of this idea, we assert that the people of England, during the reign of Elizabeth, were more barbarous and ignorant than those of Athens in the time of Thucydides. Johnson's remark was applied to Athens, particularly. "The sage," as Boswell delights to term him, had never, certainly, considered the peculiar constitution of society and of government in that city. Let us, therefore, in order to disprove his assertion and establish our own, transfer ourselves in imagination, to the favored seat of Minerva, and follow a citizen of that period through the occupations and amusements of a single day. The sun has just arisen, when he leaves his couch, to repair to the large semi-circular and unroofed house, which is denominated the Theatre. Here he listens to the sublime choruses of Æschylus; the more tender and touching plays of his youthful rival, Sophocles, or the amusing and instructive pleasantries of Aristophanes. He departs from the Theatre and strolls along the streets, reading the inscriptions upon the little columns, at their corners, which record the aphorisms of the sages of his country, or the services rendered by distinguished individuals to the commonwealth. He stops to gaze upon one of those beautiful porticos, with which Pericles had embellished the city and upon whose entablature and friezes, he recognises the master hand of Praxitelles or Phidias. He enters one of them and contemplates, in admiration, the triumphs of the pencil of Xeuxis or Apelles. He issues again into the street and finds himself in the midst of a crowd who are listening to a strolling singer reciting the parting of Hector and Adromache. He escapes and approaches another collection of citizens, most of whom are young men, who are amusing themselves with a grotesque figure, in their midst, who bears in his hand a lighted lamp, and replies to the gay sallies of the crowd, only with looks of supreme contempt. He departs from the city by the northern gate, and seeks the plane trees of the Academy, and there listens, in mute delight, as Plato discourses to his throng of disciples. He returns and enters the Assembly, where orators are striving for the popular favor, and are applauded or hooted, according as they speak, well or ill, for each man is a critic, who in his youth listened to Pericles, who is in the daily habit of hearing Alcibiades and attending the lectures of Isocrates. He wanders to the Pireus and mingles with the crowd of merchants, whose conversation is of foreign lands and their productions, of tariffs, and loss and gain. He retires to Mount Hymetus, to enjoy the cool breeze of evening, and watch the little groups which lie along the banks of the meandering Ilyssus, discussing Thucydides' recent history of the Peloponesian war, or comparing the merits of the philosophy of Zeno and Aristippus, or perhaps, recalling some expression of Plato, some jest of Alcibiades, or extravagance of Diogenes. At last he ends the day reclining at the table of some friend, the delicacies of whose board might tempt the appetite of Apicus; and the mysteries of his cuisine. the admiration of a Vattel. Thus have we traced our Athenian through the occupations of a single

day. Perhaps, on the morrow, he may ascend to the Parthenon, rich in painting and statuary, which could shame the collections of the Louvre or the Vatican; in whose midst rose the statue of Minerva, resplendent in ivory and gold, and cheating the mind of the beholder with the idea that the goddess had descended in "propria persona," to watch over the fortunes of Athens. Or perhaps, he may visit the school of Isocrates, or the Stadium, or the nightly assembly upon the hill of Mars. But follow him where we may, we find no printing presses in Athens. Its inhabitants gathered from observation and oral instruction, knowledge which made them discriminating in taste, profound in reasoning, and susceptible to every thing grand and beautiful. The city was one vast gymnasium, and all its inhabitants pupils. Dr. Johnson saw nothing of Athenian life in London. There were no reciters of verses at the corners of Fleet street, no contests for laurel crowns at Old Drury, no sages instructing the people from day to day, no statuary and paintings, to keep alive the love of the Ideal, to teach to the common people the elements of beauty and the principles of taste. On the contrary he saw that those who could not read, were necessarily ignorant, and hence his remark. That he erred we have seen from the fact that the highest degree of intelligence and refinement prevailed at Athens, hundreds of years before the invention of printing. Years after the period in Grecian history, to which we have referred, when the Romans over-ran Attica, the conquered Athenian gave laws to his conquerors, in matters of taste. Horace, in his second book, thus acknowledges that servile imitation of Grecian models, which is apparent throughout the whole Roman literature:—

"Grecia capta ferum victorem cepit et artes
Intulit agresti Latio;—

Let us look now to the reign of Elizabeth, the Augustan age of English Literature; as an illustration of the truth that printing presses and grece ignoranee may be found together, or that a literature may exist without benefit to the mass of a people. There were but few persons, in the reign of this great queen, who could read; and there were but few books to read. The Utopia, the Court of Love, and the Canterbury Tales, in the English, together with the Chronicles of Froissart, and the Pantagruel of Rabelais, in the French, comprised nearly the whole number of books to be found in a private library of that period. Sir Anthony Cook and Ascham, feasted upon the literature of Greece and Rome, whilst English gentlemen, who were not savans, hunted foxes and sat in judgment upon poachers and deer stealers. The Queen, Lady Jane Gray, Lady Burleigh, and the mother of Bacon, enjoyed the advantages of a classical education, but the great majority of the ladies of England, passed an unvaried, monotonous existence in household drudgery, or over pieces of endless embroidery. The great mass of the people were without books, without knowledg from any source. Tis true that the latter part of this reign was rendered illustrious by the rise of the greatest of poets, and first of philosophers. Tis true that Raleigh and Essex murmured love songs into the ears of the maids of honor, who fluttered around Elizabeth,

and even dared to offer their incense of praise to her who sat upon the throne; as the flattering bard expressed it, "in maiden meditation fancy free." Tis true that during this reign Ben Jonson, Massinger, and Ford, were writing their plays, but still there was no literature for the people. Bacon was an author for the student. Shakspeare had few readers, and the verse of Raleigh and Essex was intended for the meridian of St. James. The Romans, in the Augustan age, were low, grovelling, and miserable; the French, in the time of Louis the Fourteenth, were enslaved, oppressed, and ignorant; and the English, in the time of Elizabeth, were miserable, and ignorant. We think we have said enough to prove our assertion, that the people of Athens, in the time of Thucydides, were more intelligent than the people of England, during the reign of Elizabeth; and that the existence of a literature is no evidence, or criterion, of the intelligence of the mass. This latter, we think, depends entirely upon the *character* of a literature, and not upon its extent or intrinsic worth. In the reign of Elizabeth, as we have remarked, there was no literature for the people, and we must descend through successive reigns, down to that of Queen Anne, before we find our English ancestors in possession of one which reached the people. But here a new era in literature commenced. Books had been written in the preceding reign, and beginning of this, upon great and weighty subjects. Locke had published his Essay upon the Human Understanding, Newton his Principia, and Dryden his Virgil; but there were none which spoke familiarly to men, none which entered their houses, criticised their lives, their morals, their habits, and their manners. To the reign of Anne, must we look for the rise of Essay writing, the fruitful mother of Periodical Literature; the means by which the waters of the fabled spring of knowledge were partly diverted from their worn and narrow channels through the cloister of the monk and the studio of the learned, to water and refresh the earth in a thousand streams. The people were supplied with reading matter, suited to their wants and adapted to their capacities, and it came to them pleasant and refreshing.

"Quale sopor fessis, in gramine; quale per æstum,
Dulcis æquæ saliente, sitim restinguere rivo."

This change in the character of the literature of England, or rather this creation of a new department of literature, we attribute to the rise of *Essay writing*, both because it was the foundation and beginning of all Periodical Literature; and constituted the most popular portion of the popular reading of the day.

The reign of Queen Anne, the period when this style of writing first rose into importance, was remarkable for the liberal patronage given to men of letters. We meet, at this period, with a crowd of literati, who held high and lucrative offices under the government. It was an age of Macænases. Bolingbroke, Somers, Halifax, Oxford, and Dorset, munificent patrons of literary merit, were each worthy to be sung by a Horace. In succeeding reigns the patronage of the government and of the great, was employed in buying parliamentary influence, and we find such men as Johnson, Savage, and Goldsmith, starving in

garrets and cellars, on crusts of bread. But the writers to whom we are about to introduce the reader, were almost without exception, above want. There was Addison; in style severely chaste, and chastely humorous. There was the sprightly, witty and entertaing Steele, in his writings a severe moralist, in his life a bon-vivant. And there were Parnell, Tickell, Bludgell, and Eusden, names of greater or less notoriety, and the associates of Addison and Steele, in many of their literary efforts. These writers, (exceptions to authors in this respect,) were independent, and passed their mornings in study, their evenings in society, and their nights at Button's coffee house. It is hinted that Addison and Steele kept late hours, at taverns, to escape from their uncongenial better halves. A common occurrence this is, for men of mind and sensibility to lavish their wealth of affection upon women, who can neither appreciate their intellect or love. And here occurs to our mind, a passage in the "Life and Opinions of Tristam Shandy," which may show the relative positions of literary husband, and foolish wife, and the character of their intercourse. This same passage has often consoled us in our bachelor existence, by giving us an insight into some portions of the domestic economy. Tristam's father, it seems, had been endeavoring to convince his lady, of the propriety of employing Dr. Slop, instead of the old woman, in a very interesting crisis, fast approaching. He failed to effect his purpose; because he could not make her comprehend the drift of his argument, "Cursed luck! said he to himself one afternoon, as he walked out of the room, after he had been stating it for an hour and half to her, to no manner of purpose; cursed luck! said he biting his lip as he shut the door—for a man to be master of one of the finest chains of reasoning in nature, and have a wife, at the same time, with such a head-piece, that he cannot hang up a single inference within side of it, to save his soul from destruction!" This by way of episode. Whatever were the domestic relations of Addison and Steele, we are only viewing them now as the sprightly fathers of English Essay writing. Contemporaneous names, greater than these, may be mentioned. He, for instance, who pined in his Grotto at Twickenham, over his unrequited love for Mary Wortley Montague, and immortalized an hundred fools in his Duneiad. But these were the principal contributors to the Spectator, the Tatler, and the Guardian—these were the first to introduce a style of writing which carried books to the fire-sides of the people. The first of these, the Tatler, was commenced by Steele, and received occasional contributions from Addison. Refering to the superiority of the papers furnished by the latter, Sir Richard remarked, that "he himself fared like a distressed Prince who called a powerful neighbor to his aid, and was undone by his auxiliary."

Posterity has objected to this too modest estimate of his own powers. Samuel T. Coleridge used always to give the preference to those essays of the Tatler, contributed by Steele. The Tatler was followed by the Spectator, the Guardian, and a number of minor enterprises. The tone of morality which pervaded these works, their sharp satire against the follies of the age, their wit and humor, their extreme elegance of style, together with a firm advocacy of liberal whig principles, secured to them a wide-spread popularity. They were issued

daily and placed in the hands of thousands, who, but for the cheap form in which they appeared, and the familiar style in which they were written, would never have read them. That they reached all classes of society, is proven by the lines addressed "To the author of the Spectator" by Tickell,

> "Thy works in Chloe's toilet gain a part,
> And with his tailor share the foplings heart,"

Their effect upon society was most salutary; as, for instance, in improving the style and character of theatrical representations. Dramatists depending upon popular favor, generally adopt the prevalent ideas of morality, sanctioned by contemporaneous public opinion. In the time of Queen Anne, the most unbridled licentiousness was allowed in plays, and this reacted upon society through the representations of the stage, rendering that corrupt public sentiment, which tolerated and demanded it, more corrupt and licentious. A Jane Shore, a Miss Prue, a Mrs. Frail, a George Dandin, (that humorous creation of Moliere in the guise of a country John Bull,) uttering what he thinks wit against cuckolds, whilst his spouse is lying in the meretricious embraces of a young gallant or father-confessor; a hypocritical or lecherous churchman, an amiable spendthrift, a sentimental scoundrel; these were the characters which delighted the elite of old Drury and the "great unsoaped" in its pit. Beaumont and Fletcher were preferred to Shakespeare; Rowe, Congreve and Wycherly to Ben Johnson, Massinger and Ford. In scenic arrangements, we learn something of their extravagances, from the third book of the Dunciad:

> "All sudden gorgons hiss and dragons glare
> And ten horned fiends and giants rush to war;
> Hell rises, heaven descends and dance on earth,
> Gods, imps and monsters, music, rage and mirth.
> A fire, a jig, a battle and a ball,
> Till one wide conflagration swallows all."

Thus were the representations of the theatre, faulty in taste and shameless in licentiousness. No one could contend that at this period it was a school of morals, or even a decent cart upon which to ride history. The Spectator strove to prevent the injurious consequences resulting to society from this cause, by correcting the representations of the stage. By his merciless ridicule of the "stage tricks" of the day, and by his just views upon the true and legitimate drama, as a school of morals, he sought to banish from the stage whatever was objectionable in taste or sentiment, and he partially succeeded. This was one of the many evils which these publications were instrumental in removing from society.

But the importance of the literary efforts of the Essayists of the reign of Anne, is to be estimated as much by the *taste* which they formed for this particular style of writing as by the immediate effects they produced upon society. They gave to the people reading matter which suited them, and supplied their wants, and thus did they create a necessity for a Popular Literature. The consequence is, that they have had many and able followers, and their productions constitute

the most agreeable and entertaining portion of English literature. Johnson, Goldsmith, Mackenzie, Mackintosh, Scott and a host of others, have successfully cultivated this species of composition; and at the present time, the brightest ornaments of England's literature, are her Essayists. But amid all the Essayists which she has ever produced, we unhesitatingly acknowledge our preference for the tender-hearted Charles—the pensive Elia. No one can love his writings without loving him; for no writer has made himself to appear so conspicuous, and yet, withal, so amiable, in all he wrote. He never incurred the charge of self-conceit, or wounded the vanity of his readers, by making himself thus prominent, because in every thing he did, there was a simplicity, an address and quaintness of character, as pleasant and entertaining, as the quaintness of style in which he told it. No author, with the exception of Dr. Johnson, is better known to the public than Charles Lamb. The public was the confidant of his joys, his sorrows, his sympathies and his antipathies; his aversion to his duties at the East India House, and his fondness for roast pig. His drinkings with Jem White, his long conversations at the "Cat and Salutation," with Coleridge, his fondness for London, its noises and its old book-stalls, his idolatry of his sister Mary, and (that beautiful and touching episode in his monotonous existence) his unrequited love for Alice W. All these things he has made known to the public. The carelessness with which he wrote, his utter neglect of the limae labor, are to us attractions, instead of defects. It seems as if he had, scratched down his thoughts as they occurred, in the words which first presented themselves, and thus furnished us with a fair transcript of his mind. This gives them as striking an individuality among Essays, as their author enjoyed among his associates. No one could mistake them for the Essays of any but Elia, and no one could mistake Lamb for any other than the veritable Elia. But we do not intend to trouble the reader with portraits of the modern British Essayists. So numerous are they, that to describe the peculiarities of style among them, would require much more space than we have to spare. Even among the intimate associates of Lamb, besides others great in other departments of literature, we find Hazlitt, Hunt and Hood. All of them popular Essayists, but differing materially from each other in every thing save their radical political principles. Our only object in these desultory rambling remarks, upon Essayists and Essay writing, is to call attention to the importance of this species of literature, and the necessity of supporting our Reviews—its only vehicles in this country.

In this as in every other department of literature, we boast but few publications. A few papers from Franklin, Irving and Legare, together with occasional contributions from different writers, scattered throughout our periodicals, are almost all that are worthy of the name. We find in an old number of the Edinburgh Review, the following paragraph, in in an article by a writer who was a liberal politician and a friend to American institutions. "Literature the Americans have none—no native literature we mean. It is all imported. They had a Franklin indeed; and may afford to live for half a century on his fame. There is, or was, a Mr. Dwight, who wrote some poems, and his baptismal

name was Timothy. There is a small account of Virginia by Jefferson, and an epic by Joel Barlow, and some pieces of pleasantry by Mr. Irving." Now, though these remarks betray the ignorance as well as the sneering jealousy of the Englishman, yet it is true that the advances of America in literature do not keep pace with her social and political progress. Could Lord Bacon live again, he would find in our people an illustration of the practical working of his teachings; for we consult utility in all we do. And some have imagined that this prevented the growth of a literature among us. This idea is somewhat similar to the one entertained by some, that in the progress of true religion and accurate knowledge, the cultivation of the poetic faculty must necessarily decay. They grieve over the divorce of imagination and religion. They mourn over exploded Polytheism. They would still delight to paint the nods of the Thunderer—the horses of Mars—the caduceus and talavia of Mercury, and the cestus of Venus.

They cannot comprehend the poetry which exists in the idea of a pure essence like the God of the christian, in whose contemplation, imagination, instead of picturing the beauty of a feature, must soar and soar forever, to measure the glory of an attribute They worship the poetical mythology of Greece, with its deep allegories, its beautiful and sensual fictions. They would people our woods again with Dryades, our fountains with Naaids, and bring back the Nereides to our lakes and rivers. They would give voices to streams and winds, and loves to the bright tribes of Flora. As far as regards this animation of insensible objects in Heathen Mythology, as a source of poetry, we would simply say, that the voices of Nature are as many and as audible now as ever. Still, as of old, day unto day uttereth speech, and night unto night showeth knowledge; though this must ever be an inarticulate speech, a silent language; which, unheard by the ear, is apprehended by the heart. And though Mythology and Polytheism have ceased to furnish their material, yet imagination will always have its proper exercise, and poetry will always exist, for deep in the heart of man lies the source and sanctuary of poetry, and there it will remain, though the stammering tongue refuse to syllable it in words, till Nature is no more, or the beating heart is stilled in death. To those to whom the gift of song is granted, the expression of this poetry of the heart, in verse, is natural, necessary and unavoidable. This idea is beautifully expressed by De La Martine, (a French poet of our own times,) in the following lines:

"Mais pourquoi chantais—tu? Demande a Philomele
Pourquoi, durant les nuits, sa douce voix se mele
Au doux bruit des misseaux sous l'ombrage voulant
Ie chantais, meseamis, comme l'homme respire
Comme l'oissau qemit, comme levent soupire
Comme l'eau murmure en coulant."

The idea that the progress of knowledge will ever confine the vagaries of fancy and imagination, or rob poetry of its proper and legitimate subjects is absurd. Equally absurd is the idea, that the utilitarian spirit of the age will prevent or greatly retard the growth of a litera-

ture among us. It may, we admit, materially change the character of our future publications, rendering them more practical, more useful, and more instructive. It may oblige our poets to follow Wordsworth, in choosing their subjects from the common, every-day objects around us, and to supply their poetic diction with words to characterize a locomotive and a steam-press. Our prose writers may be compelled to dwell in practical teachings, and not in abstract speculations. Our writers of fiction may be driven from the beaten path of the old romance, to seek for objects of compassion among the oppressed mass, the tenants of work-houses and prisons; and to excite our interest in the amelioration of the condition of our race, in the improvement of prison discipline, of criminal codes, and systems of taxation. They may be compelled to recount the real ills of men, and not fictitious misery or sentimental woe. Their heroes must not lisp love-songs or indite sonnets upon their lady-love's eye-brows, or die of ennui or "feelings dull decay;" but they must be serious, earnest men in the vanguard of progress,—they must rage with want or madden under oppression—their life must be a serious work—their love an every-day stimulant to exertion—an ever-active principle of good.

This change in the character of our literature may be required by the spirit of the age, but so far from deploring it, we should view it as the dawn of that day, when literature should fulfil its proper offices, when the press should cease to send forth its bitter or poisonous waters, but should be a fountain of sweet waters, sending forth pure and invigorating streams, to assuage the thirst and heal the maladies of the nations.

The reason of the want of a literature among us, is, we think, correctly accounted for by the writer in the Edinburgh Review, to whom we have before referred. In the paragraph immediately succeeding the one we have quoted, he continues: "But why should the Americans write books, when a six weeks passage brings them in their own tongue, our sense, genius, and science in bales and hogsheads. Prairies, steam boats and grist mills, are their natural objects for centuries to come. Then, when they have got to the Pacific Ocean, epic poems, plays, pleasures of memory, and all the elegant gratifications of an ancient people, who have tamed the wild earth and set down to amuse themselves. This is the natural march of human affairs." Here, we think, are the true reasons for the meagre number of our native productions of merit. Every thing around us—the youth of our country—its vast resources—its unparalleled facilities for commerce—its vast unappropriated territory. Every thing invites to enterpise. The consequence is that no characteristic of the American people, except their tobacco chewing and spitting propensities, appears to the European tourists, so prominent as their absorbing pursuits of gain. We have no gala days, no carnivals, no national festivals, no intervals of leisure and quiet, but we present to the foreigner the spectacle of an entire people, old and young, with restless activity and wasting energy, hastening to get rich. When an inter-national copy-right has been established, so that we can no longer enjoy, so cheaply, the literary productions of Great Britain; when the many avenues to speculation, which we now have shall be closed; when emigration shall cease and our

population becomes fixed and settled; when, hoary with age, we can look back upon the picture of our national existence, mellowed and softened by distance and time, then will we have a literature worthy our people and our country. "This is the natural march of human affairs;" but till the period of our youth is passed, our talent and energy will be monopolised in the business of money-making and progress. We, however, must feel surprised that, in the meantime, Essay-writing has not been more cultivated among us. With few literati, we have still more intelligence among our people and more readers, than any other nation upon the globe. And it is strange that this species of literature—which professes to instruct and amuse, without study or fatigue, and which, therefore, so well suits the habits and wants of our people, should not have been more attended to by our literary men.

Political Essay-writing, to which we have had no reference in the preceding remarks, has been more cultivated in this country. The papers of the Federalist contain better and more comprehensive views of the economy and science of Government, than the most labored treatises which have ever been published upon the subject; and ever since the formation of our Government, our political publications have been of the highest order. The whole body of our people are well informed upon political subjects, and require ability in the conduct of our political press. This results from our peculiar form of Government—from the jealousy of the people of the exercise of delegated authority, which causes the investigation and discussion of political questions and the opinions of political aspirants. Besides, we are experimenters in the science of government. We started with the startling paradox, that men were equal and capable of self-government, and we ever sanction the wildest speculations in political science. No censorship confines the freedom of the Press—no errors here are sanctioned by prescription—no such fiction obtains in this country, as that the King can do no wrong—the penalties of a *praemunire* do not affright us—and the consequence is, that every subject and every character is freely canvassed by the Press; controlled alone by an enlightened public opinion.

The vast influence of Political Essayists, may be seen by tracing the progress and fruits of their exertions in the past history of England. About the same time that the Spectator was begun, appeared the Examiner, a paper almost exclusively devoted to politics, and among the first ever established for the advocacy of particular political tenets. It was supported by all the talents of the Tory party. Among its principal contributors, was the witty and dissolute Bolingbroke, and towering above him in intellectual stature and wickedness, that man of God and devil incarnate, the dry, caustic, bitter and sneering Dean of St. Patricks. This paper, though behind the age in many of its views, gave rise to the free discussion of political subjects, for instance, the Treaty of Utrecht and the Hanoverian succession. We view this free discussion of political subjects the great safe-guard of a Republic or Monarchy; and the establishment of such papers as the Examiner an era in the history of England. We have often been amused at an idea, in which Blackstone, the great Commentator, delights, viz: that England, since the Heptarchy, has been free and in-

dependent. When he comes to the Norman conquest, he labors hard, in the face of all history and the dreadful slaughter of the battle of Hastings, to prove it a misnomer. But if the Saxon nationality was not then lost and the Saxon conquered, we know not what constitutes conquest. Their Kingdom passed to a Foreigner; their language, their judicature, and their manners were changed; and all the offices of trust or emolument, monopolized by the Normans. The historians of England, generally, more moderate than Sir William, date its liberties from the grant of Magna Carta, at Runnymede. Even they are in error; for if we view England hundreds of years after, we find her groaning under the oppression of the Tudors. Henry the Eighth, increased ten-fold the prerogatives of the Crown, broke the power of his nobles, (the great conservative influence in a monarchy,) nullified the effect of the Reformation, by making it a subject of legislation, and engrossed in his own person, the rights and privileges claimed by the Pope. Throughout the three succeeding reigns, religious intolerance flourished in its malignity, and England presented the strange spectacle of a nation thrice changing its religion with its monarch. James the First, the pedant, buffoon and coward, when he came to the throne, granted excessive monopolies, (a custom which the imperious Elizabeth was obliged by her Parliament to discontinue) prorogued his first Parliament, for refusing to grant supplies without a redress of grievances, and openly proclaimed the divine right of Kings. In the meantime his subjects who adhered to the Church Establishment, pursued the non-conforming catholic and dissenting puritan, with the arrogance of power and uncharitable zeal of bigotry. These evils, together with the exaction of tonnage, and poundage, and ship-money, and the oppressions of the Star-Chamber and Court of High Commission, in the succeeding reign, hastened the crisis, and raised up Pym, Eliot, Hampden and Cromwell, to overturn the throne with its mass of abuses. Here then was religious intolerance—oppression legalized by corrupt tribunals—direct taxation, and all the evils of unfettered despotic power. We look in vain, for a single element of national liberty, and yet Magna Carta was in existence, and had been for hundreds of years, and in it, besides many others equally salutary, was this provision, that no freeman should be hurt in life or property, "nisi per legale judicium parium suorum, aut per lege terræ." There is no inherent virtue in parchment constitutions, or declarations of rights. This provision of Magna Carta was as absolute, as at this day, is the law of tenure by knightly service, with all its incidents of aids, relief, premier seisin, wardship, marriage and escheat. This should be well considered by those who think that there is a principle of self-preservation in our constitution, and that we can never be enslaved, because the power of the Executive is accurately defined in that instrument. England is indebted for her freedom, not to empty declarations of abstract principles of right government, but to the blood and toil of the great revolution; and to such papers as the Examiner and Englishman, which keep the people informed upon political subjects, and cause them to watch narrowly every exercise of the prerogative of the Crown.

The power exerted by the political essayists of England at this

day upon public sentiment, is astonishing. If any step in progress, in advance of the age is to be taken, they are the first to take it. If law reform is necessary to clear the statute book of contradictory, absurd or obsolete statutes,—if a grant is to be made for the support of the Catholic clergy of Ireland—if disabling statutes against non-conformists are to be repealed—if a reformation of the system of representation in the House of Commons is to be effected, or a repeal of the corn laws and adoption of Free Trade principles—the Journalists very often effect these objects by the force of public opinion, which they themselves create and direct. All parties, whether followers of Peel, Russell, or Cobden, appreciate the influence of their political press, and use all their talent and energy to effect their objects through its instrumentality. The Reviews of England, for years past headed by such men as Smith, Brougham, Murry, Constable, Hunt, Wilson, and Lockhart, have been the beacon lights of England, guiding her safe amid the startling political changes and revolutions of Modern Europe. We do not think we attach an undue importance to their influence.

If we wish a still more convincing proof of the power of a political press, we find it in the history of France. There we find pamphleteers as the chief agents in producing a revolution which agitated Europe. Our revolution was not a violent movement. Our Declaration of Rights was simply declaratory of the principles of Magna Carta. Our people cherished these principles, for which our English ancestors contended at Naseby and Marston Moor; unfettered, too, by the many influences which, in the mother country, modified them or controlled their expression, and when the crisis arrived, the question for them to determine was simply one of expediency, viz: that of dissolving our connexion with the mother country. But in France it was different. The first step towards Republicanism maddened and bewildered the nation. The declaration of the simple and absolute rights of men appeared to the common mind as so many dazzling dogmas. The people were startled by the novelty of truths, which are now the axioms of political science. In a word, France was not prepared for the changes of revolution and the liberty they obtained, and at whose shrine they worshipped, was not the bright, beautiful, and benign Goddess of our Idolatry, but a horrid caricature—a premature birth—the offspring of Infidelity and Anarchy—bloody and deformed. This hasty denouement of the French Revolution was the work of the Journalists; and its excesses may be attributed to the fact, that the directing spirits of its movements, were theorists, reasoning upon abstract right, influenced with visions of ideal liberty and perfectibility, and counseling changes which the people had not the virtue or intelligence to carry into practical operation. The first blow struck at the Throne, revealed its weakness, and thenceforward it was a work of destruction and not of reformation. Thus did the Encyclopædists produce the great revolution.

If we look now to France, we see its political press exercising a controlling influence upon its destinies. As mighty as it is in England, and as brilliant as is the array of talent which it employs, in France it is a still more powerful agency. The whole talent of the land is

employed in its support. Her greatest men of the present day are the offspring of her press, and their transcendant genius has constituted it a fourth estate of the Kingdom. Thiers, Chautaubriand, De La Martine, Cormenin, and Guizot—these are some of those who first appeared before the public as writers for the daily press, and use it now, in the zenith of their glory, as the medium by which they regulate the tactics of parties, and communicate their literary labors to the public. This accounts for the great ability displayed in the political press of France, and for the solidity of much of its social literature.

The population of Paris looks to the issues of its press, in great emergencies, as the heathen did to the revelations of the Delphic Oracle. In 1830, an inflammatory protest from the office of Thiers, called the sections of the city to revolution and bloodshed. Our last advices from the Continent bring us the intelligence, that many papers in the city of Paris have been suppressed by order of Government, because they criticised too severely the conduct of France in regard to the royal marriages of Spain, by which she has violated the Treaty of Utrecht, and her neutral position between Austria and Pius IX. These plain facts demonstrate, better than the most conclusive reasoning, the power and importance of a political press in a land where there are many readers.

A continuation of the liberty we enjoy, must depend upon the enlightment of the people, and an untrammelled press. This idea is trite and common, but let it become singular and familiar only to theorists, and constitutions will never preserve our liberties. It should, therefore, be the duty of every patriot to cherish the liberty of the press—to purify and elevate its tone, so that it may drop the slang, which better suits Grub street or the Pont-neuf, and the hypocritical cant of demagogueism—that it may take enlarged and liberal views of public policy—that it may stand up in defence of religion and morality—and that it may exist to instruct and edify. Let this be effected, and it will be a powerful instrument of good; but let blind party zeal, or a miserable subserviency to party purposes blind its eyes to the truth, or paralyze its strength, and it will be powerful only to do evil—a great Briareus—a pur-blind Argus. May the liberty and independence of the press always be preserved, and in the concluding words of the Irish patriot's address to his constituency, "May the liberties of the people be immortal."

Art. III.—TEXAS SUGAR LANDS, Etc.

THE greatly interesting and able discourse of the Hon. P. A. ROST, delivered before the Agricultural and Mechanical Association, in 1845, extracts from which are published in the December (1847) number of the *Commercial Review*, is well calculated for and worthy the perusal of sugar planters, and of all others disposed to cultivate the sugar cane in Texas, as it is full of much valuable information and careful observations. Judge Rost has most likely never visited the neighborhood

of Galveston city, Galveston Bay, and its tributaries. If he had, he would not have fallen into the error in his address that sugar cane would not ratoon here. The information, it appears, came to the Judge from a Mr. John C. Marsh, who, as is stated in the article, is said to have planted sugar cane in this neighborhood for five successive years, without ever obtaining ratoons.

To prove the incorrectness of such a broad assertion, I have only to state that there are now growing at New Washington, Col. Morgan's plantation, sugar cane which has ratooned the fourth year. New Washington is at the margin of Galveston Bay. Some four years ago, a number of stalks, the third year of their ratooning, were taken to this city and exhibited, and were then and there seen by hundreds of living witnesses. These stalks had matured full seven feet, and were of an equal height the preceding year, they were what is called "ribbon cane," and were pronounced by old and experienced planters, equal, if not better than any grown in the United States, and not inferior to any grown in the West Indies.

As far back as 1830 to 1832, the sugar cane was cultivated with success on the Trinity river, by Judge Williams, and the ratoons of the third year were nearly equal to the growth of the first year, and the sugar therefrom made was equal, if not superior to any ever imported from Louisiana, in sweetness, color and grain. The place where this sugar was planted is about twenty miles from Galveston Bay, on the Trinity. It is conceded by all impartial men, without any hesitation, that the lands on the "Caney" are superior to any of the sugar lands in the Union, and I could name many who are, and have been cultivating the cane there on a large scale, with great success and profit. Amongst the largest planters, I would name Mr. Duncan and Mr. Sweeny, both of these gentlemen are well known to the sugar planters, and samples of their crops have repeatedly been sent to your market. These gentlemen, I have no doubt, would willingly give any information to sugar planters as to whether cane will ratoon in that neighborhood, being only about forty miles from Galveston Island. Mr. Solomon Barrows, near Cedar Point, on the shore of Galveston Bay, has now a fine field planted with cane (ribbon) which has ratooned for several years past, and will vie with any ever planted in Louisiana. Mr. M. Dunman, near Bolivar Point, has now, and has had for several years past, as fine a field of cane as ever was or may be seen, in Louisiana, and which has for several years back ratooned. Mr. Dunman's residence is about twenty-five miles from Galveston. Mr. McMillen, in the neighborhood of Houston, and about twenty-five miles from Galveston Bay, has had last year, and a year before last, cane which matured, being then the fifth year of its ratooning, seven feet high. The facts are here now well established and ascertained, that the sugar cane on the prairies, near the bay, furnishes by far more saccharine matter than the cane on the bottom lands, although not so luxuriant in its growth.

The cane of Mr. Sweeny's plantation, on the Bernard river, has ratooned, as I am credibly informed, the sixth year. Mr. Duncan, who also plants on the Bernard, has made sugar which was considered

in Galveston by judges, equal to any ever imported from New Orleans, or offered for sale in that market. Colonel Jackson has planted sugar for some three or four years on his plantation, which is at about a distance of from five to six miles from Galveston Bay, and as I am informed, with success, and obtained his seeds for planting from Colonels M. T. Rodgers and Amasa Turner, both of whom had their plantations on Cedar bayou, in the immediate vicinity of the bay. I could and might cite a very large number of other planters in this neighborhood, but believing that the "*facts*" set forth above will satisfactorily prove the incorrectness of Judge Rost's statement concerning the sugar lands of Texas generally, and those of Galveston Bay, and the lands as far south as New Orleans, and its neighborhood, in particular. As to the individual from whom the Judge received his information, and the credibility of the informant, I can say nothing, except that after a diligent inquiry of those residents of the vicinity of Galveston Bay, who have resided here for twenty years or more, I have not found any one who was acquainted with any individual of the name who resided in this part of the country.

It would here not be amiss to mention that any Louisianian who has travelled in midwinter through the prairies of Texas, which the Judge denominates the "naked lands," would not find that he has changed climate, and that he has travelled out of the regions where tropical plants love to grow. The writer of this has yet to learn that in the State of Louisiana tropical plants love to grow in the winter season, they being exposed to those unmitigated furies of northwesters, which the writer has often experienced in Louisiana, but the writer does know, that all southern plants, leaving tropical plants out of the question, cannot grow there unless artificial means are resorted to; and a traveller from New Orleans would only be under the necessity of a one half hour's ride to visit the gardens up and down the river, from Carrolton to the battle-ground, to inquire "for what reason have you Louisianians so many hot houses and hot beds in your gardens?" The answer will be, "Because the frost destroys the southern plants, and they cannot be exposed to the cold weather which we regularly have here every winter." And as every one knows New Orleans and its neighborhood "is not built on naked lands, but on the fertile soil of southern swamps," which luckily for New Orleans, encircles it nearly the whole extent, and prevents the northwesters from striking the tropical plants with their unmitigated fury. The year 1837, I think, gave a good example to Louisiana, that southern plants cannot well prosper there in winter, and every inhabitant will recollect that in that year every orange tree was killed. Now, in such weather, a traveller just from the northern States riding out on the Louisiania prairies, would find and certainly say, that he has not come to the Elysean fields of Louisiana, but would believe that he was somewhere near his own home. And I do candidly believe, that the northwesters coming from beyond the Rocky mountains, do not go south in their travel through such a vast country, for the sole purpose of giving to this portion of our Union, Texas, the monopoly of keeping their unmitigated fury within their own State limits, but I must believe that they cross

sometimes the boundary line, the river Sabine, and pay some visits of respect, for old acquaintance sake, to our neighbors, the sugar planters of Louisiana.

In conclusion, then, I am bound to state, that the furies of the northwesters are in Texas not looked upon and felt as much as the northeasterly winds, and by a glance at the map it will be seen that they come from "Louisiana," that is to say, a region of our Union "where tropical plants love to grow." H. W. W.

We cannot partake of the temper which is evinced in this thrust at the climate of Louisiana. If Judge Rost was deceived in the information given him of the capacities of the soil of Texas for the culture of sugar, *we know* he was honestly deceived, and after consulting the most reliable sources.

Since receiving the above paper some one has kindly sent us from Texas "*A Statement of the Relative Advantages and Capacities for the Culture of Sugar in Louisiana and Texas.* By a Disinterested and Close Observer." We are delighted to receive and publish it for the valuable matter embraced. It is our desire to do full and ample justice to Texas in every particular, and we invite the cooperation of her citizens.

The writer of the following article proposes to state his views of the climate, seasons, fertility and fitness of soil, product per acre, quality of the sugar, facility of getting fuel, of navigation and market, of supplying a plantation with teams, provisions and lumber, and the relative prices of the land, etc., etc.:

The Climate.—Not only from the fact of there being a full half of a degree of latitude in favor of Texas sugar lands on the average, over Louisiana, but from the ranges of the mercury and facts observed, I would say that the climate of Texas is milder. The mercury in lower Texas never falls below twelve degrees, whereas in Louisiana it has been as low as ten. The orange trees and tender plants are killed in both countries about once in ten years. The great bug-bear, a norther, so much talked of in Texas, is on chemical principles, felt more by our nerves than shown by the thermometer, which shows nothing very cold, whilst animals suffer under it from the general sweep of the wind. It would be the same in Louisiana if the useless swamps, which are quite as large as the prairies of Texas, were as much exposed to the winds. The sea air has a greater effect in Texas to equalize the temperature than in Louisiana, from the extent of the coast and numerous bays. The Palma Christa, the egg fruit, the okra and other tender plants grow with great luxuriance, and in Texas approach the size of trees. The sweet potatoe and sugar cane flower in this climate, and the cane rattoons to such perfection that fair crops are made from ratoons of five years old. Of this more will be said in its proper place.

The Seasons.—The seasons are a little more inclined to be dry in Texas than in Louisiana, which is an advantage, as crops are injured more by excessive wet than dry weather. In an average of five years in Texas, only one was too wet for good culture, and none too dry for good crops of sugar and cotton. The soil of Texas when pulverized, has an open texture which lets down the roots of plants to the moisture, instead of baking into a tight pan or crust, as is the case in Louisiana,

upon the Mississippi river and on the Teche. The planters in Texas, if there be moisture enough from rain, to bring up the plant, feel secure of a crop.

Storms.—The tornado scarcely ever invades Texas, owing to some conformation of the coast, and gales are rarely strong or long enough in duration to blow down either cotton, corn or cane.

Fertility.—The soil of Texas is better tempered, and therefore richer than in Louisiana. It seems preposterous to assert that any soil can be richer than the alluvial of the Mississippi river, yet that has often either too much clay or sand, (oftener the former,) which renders it tight and unkind, or too porous. The sand drifts from the overflows, prevent it from having the substance necessary to great fertility. In Texas the lands of Caney, San Bernard, Oyster Creek, Brazos, Colorado, and of many other regions, are a black soil, mostly a vegetable mould for five or six feet down, and mixed enough with loam and sand so as to be rightly tempered for great fertility. Three thousand to four thousand pounds of seed cotton are about the average produce in good seasons, and full four thousand have been raised to the acre, and sugar in proportion. No lands can be richer than the bottom lands of Texas.

Cost of Lands.—In Louisiana, the sugar land on the Mississippi, Lafourche, Terrebonne county, Attakapas, and other places suited for the culture of sugar, will cost on the average, when improved, forty dollars per acre. In Texas, lands equally as rich and better tempered, will only average from three to five dollars an acre, making a difference of at least seven-eighths in the outlay or investment, which would overbalance a thousand inconveniences, if they did exist.

Navigation and Getting to Market.—In one-third of the sugar district of Texas, the navigation of the Brazos, Bernard, Oyster Creek, Colorado, Guadaloupe, Navidad, Trinity, Jacinto, Neches, Sabine, Caney, Lavacca Bay, Matagorda Bay, Neuces, and other waters, let out the crop as easily as the average streams and bayous in Louisiana. In the other two-thirds, the cost will be something more for transportation, say one dollar a hogshead more than in Louisiana, which on the wide average for all the crop will be three-fourths of a dollar more to the hogshead for the whole State, and this cost would be ten times made up by other facilities that can be easily appreciated and clearly pointed out.

Quantity of Sugar Lands in Texas.—In Louisiana, by Champonier's statistics, there are now about nine hundred plantations, large and small, all told, in sugar, which have never produced over two hundred thousand hogsheads, and on the average only one hundred and forty thousand.* If more be put in culture all the inconvenience appertaining to the remote districts of Texas, will attend it so that the heavy draining and other inconveniences there, will make any new lands equal in cost to the old places, before a crop can be realized.

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* Mr. Champonier estimated the number of sugar estates for 1847-8, at twelve hundred and forty. It will perhaps exceed thirteen hundred. New regions in Louisiana are every day taken into sugar culture.—EDITOR.

There are in Texas in connection with wood, fertility, navigation and climate by my estimate now (not counting eventual facilities to be made by improved navigation or railroads,) the following amount of lands suited for sugar on the streams named respectively:

On Oyster Creek, both sides, for 120 miles following its meanders land for	120	*Plantations.*
On Brazos river, counting two to three miles on each side,	200	"
On San Bernard, both sides, counting two miles out from it,	70	"
On Caney, for sixty miles, following its meanders, and two miles each side,	140	"
On Colorado,	100	"
On Trinity, both sides, three to four miles out,	120	"
On Guadalupe,	80	"
On Navidad,	40	"
On Trespalacios,	30	"
On Garcita and other small streams near,	40	"
On Nueces and San Antonio, near their mouths,	40	"
On Lavacca and small streams near,	40	"
On Jacinto,	70	"
On Spring Creek,	50	"
On Neches,	40	"
On Sabine,	30	"
On Chocolate and neighboring bayous,	30	"
On Peach Creek,	40	"
On Cedar Lake and river and other points near,	20	"
On Mill and Cummings' Creeks,	40	"
On all intermediate grounds more than three miles back, between all the waters,	100	"
	1440	

The above does not include the wide spread prairie, much of which is fertile, nor the Rio Grande lands, owing to the want of safety for the slave owner there at present. This, of course, is only an approximate estimate, some of the numbers being probably too large, and others too small, yet the error cannot be large enough to be of any importance. The estimate is for the average size of the plantations in Louisiana, that is to say, about one hundred and fifty hogsheads each, with a sufficiency of timber and wild land for further increase.

Health.—Texas is a country infinitely dryer and with fewer swamps and freer circulation of air than Louisiana, and experience says that negroes are more healthy, and multiply faster. The loss by sickness and death among negroes, has been estimated at ten per cent. less on the rich alluvial bottoms of Texas than on similar lands in Louisiana. This is probably very near the truth.

Products per Acre, and Quality of the Sugar.—Two hogsheads, as far as the effort or trial goes, are very common to the acre as a fair average in an average year. The quality of the sugar, drier and whiter, and the grain better and firmer. The samples compare with the best Louisiana, and appear better and the molasses less in quantity. They

think it will be dry enough to box. It is proper to remark that the manufacture of Texas sugars has been generally a matter of experiment with most planters in Texas. The quality of the juice is different, and probably requires some difference in the process of boiling, etc. Besides, most of the planters here commenced this business without any previous experience, and many failures have taken place solely from a want of knowledge. A conclusive proof of this, is the vast improvement that is manifest when we compare the late samples with those of former years.

Ratooning.—Good sugar and cane thick enough for a stand, has been made from seven year old ratoons. A small falling off in the stand occurs about the fifth year, and all experience goes to say that for five years the ratoons will do well. In Louisiana, three years are as long as they succeed well. when it becomes necessary to replant, and some doubt about the policy of leaving them that long, I would say that two years will be gained in the ratoon in Texas, which is a great saving. This must be owing to the better climate of Texas and to the drier soil which preserves the root better.

Cultivation, Coco and Grasses.—There is no coco in Texas yet, and but little crop grass. Half of the cultivation with a plow is all that Texas would require in comparison with Louisiana, both to keep the crop clean and the land light and fine.

Supplies for a Plantation.—In Texas all plantations will raise their meat, both beef and pork in abundance. The stocks of cattle require no care, and hogs but little to furnish all that is wanted of meat; and corn grows abundantly and easily for the supply, up to any demand. In Louisiana all the meat, and, I would say, half of the corn and hay must be purchased. The difference in provisioning two places of the same size will be, in Texas only one-fourth of what it is in Louisiana. The rich meadow-like prairies covered with a luxuriant growth of grass lie near and contiguous to all the plantations in Texas, and these not only furnish meat for nothing, but if bought will cost only 1 1-4 cent a pound, and bullocks of five and six years old weighing 650 pounds, can be had generally from six to eight dollars a head. Mules can be raised, as well as cows, hogs, and sheep, without any feeding summer or winter.

Lumber, Staves and Brick.—There is a great scarcity of Cypress in Texas adjoining the plantations. In two-thirds of the cases, Cypress and Pine lumber will have to be brought from a distance. In Louisiana not more than one-third of the plantations have to get staves from any other place. But all will have to get this material from abroad in time, and this may be counted upon. The cost of getting cypress staves and building timber is not very much, and will form a small item compared with buying provisions, teams and fuel. Brick are easily made on all the places in Texas, the clay being generally good. Should the sugar be made dry enough to box (which is very likely to be the case) then any wood could be used, such as cotton, poplar, sweet gum, sycamore, elm and other kinds, and a circular saw would also cut all such timber into staves or boards for boxes.

Fuel now, and eventually.—We have shown that upwards of a thousand plantations can have wood in abundance in Texas. In Loui-

siana one-fourth of the planters are now without wood, except drift or wood rafted from a distance; one-half are rapidly exhausting their wood, and have to go from three to six miles into the very worst of swamps for it. They are also compelled to dig canals, costing from $2,000 to $20,000 to enable them to get it out. Should we have to depend upon rafts the supply is at hand, for all the rivers of Texas are well wooded up towards their heads, and in the freshets its rafts can be sent down as cheaply as on the Mississippi. Coal can be got something cheaper in Louisiana if necessary. Our mineral resources in Texas are not yet well ascertained.

Prospective advantages, such as appreciation, etc.—Any good sugar lands purchased in Texas at a price within $5 an acre, will become in five years worth $20, and more if improved. The natural tendency in the States to equalization in prices with reference to all the facilities of position, is certain, and a balance becomes struck by the operation of things, crediting the one with the advantages, and debiting the other with all the inconveniences. Investments, therefore, in Texas sugar lands would be better and more certain than in any other species of property, and the appreciation would be at least one hundred per cent. in from three to five years.

Dividends on Capital.—If a given sum, say $100,000, in Louisiana, gives six or ten per cent. per annum, a fortiora, $30,000 in Texas accomplishing fully as much, would, under the superior advantages, give 20 or 30 per cent. per acre. This is a moderate estimate.

Expenses of a Plantation, preparatory and annual.—The heavy ditching, levying and draining in Louisiana will exceed the same in Texas five times; cost of provisions and teams all of five times; fuel twice as much. The preparatory expenses of a plantation in Louisiana, therefore, will be for the above preparations of draining, canaling, levying, all of three times as much as in Texas. If these improvements are already made, they must be paid for in the advanced price of lands, being about $100 per acre. I would then say, one-half the expense can be saved in the start in Texas, while the annual expenses are not more than one-third as much as in Louisiana.

Development hereafter.—Within the last twelve years, a population of five millions from Virginia, the Carolinas, Georgia, Tennessee and Kentucky, have settled up to fulness, the Cherokee and Creek country of Georgia, Florida and Alabama, forming half of those States, all the Western district of Tennessee, being a full third of the State, more than half of Mississippi, half of Louisiana, half of Arkansas, all of Missouri and the Red river side of Texas. Now, with an increased population in all these States of 8,000,000, and half of all their lands fully exhausted, may we not safely calculate that the stream of emigration, urged on by the present eagerness for sugar planting, and the important fact, (that will soon be known and appreciated) that Texas contains more than half the sugar lands in the Union, will settle the balance of Texas and Arkansas as fully in two or three years hence, as the other States are now settled?

The large slave holders are very restless in all those States. They have been investing in Louisiana and the Mississippi swamps until uncultivated lands are worth $40 per acre. They will next make a

rush at lower Texas, and a rapid development will soon take place to the astonishment of all. Lands will rise, as we have said, 100 per cent. in a few years, and all advantages, facilities, and inconveniences, will be distinctly understood and acted upon. The enterprise of Americans will insure this—prejudice must yield to facts.

These remarks have been elicited by an article that lately appeared in De Bow's Review, which asserts that Texas can never be the rival of Louisiana in Sugar for the want of fuel, and, also, because the cane will not ratoon in Texas. The article cites the authority of Judge Rost and of Mr. Marsh, of Attakapas. The writer of this is a citizen of Mississippi, who, though he has not yet any interest in Texas, has had ample opportunities of attesting its great advantages as a Sugar country, and he is willing to submit the statements above made to the severest test for a confirmation of their truth.

Art. IV.—SILK AND THE SILK CULTURE.*

NOTE.—As very great expense in collecting and compiling information, and in engravings, we have procured the "Silk Treatise," whose publication commences with the present No. of the Review. The writer has been engaged for nearly one year in preparing it, and many years in collecting the matter. The whole subject will be comprised in three parts, and is commended to all who wish well to the advancement of the industry of their country.—EDITOR.

ORIGIN OF THE SILK INDUSTRY; EARLY HISTORY; SKETCHES OF PROGRESS; PECULIAR VIEWS AND PRACTICES OF THE CHINESE IN THE PRESERVATION OF EGGS; CULTIVATION OF THE MULBERRY TREE; CONSTRUCTION OF FADING APARTMENTS; MANAGEMENT OF THE SILK WORM; COCOONERIES, ETC., ETC., ILLUSTRATED BY CUTS; INTRODUCTION OF SILK CULTURE IN OTHER COUNTRIES; HISTORY OF SILK IN THE UNITED STATES; NATURAL FACILITIES OF THE U. S. FOR MAKING SILK; ADVANTAGES OF SOUTHERN AND WESTERN STATES; COMMUNICATIONS FROM PRACTICAL MEN; GENERAL SUGGESTIONS ON THE SUBJECT.

IT is the *duty*, as it is the *interest*, of all nations, to guard carefully their *resources*. They should not only aim at the perfection of those

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* NEW YORK CITY, December, 1847.

J. D. B. DE BOW, ESQ.

I received not long since, through my friend the Hon. Edmund Burke, of the Patent Office, your letter of recent date, in which you solicit for publication my views on the subject of *Silk Culture*. I am ready to improve every medium through which I can contribute to the advancement of this interesting and important pursuit It gives me great pleasure, sir, to comply with your wish, and am exceedingly gratified to know that you have considered this a subject of sufficient importance to occupy the columns of your Review. In my opinion, sir, they cannot contain matter of more intrinsic value, or that which more intimately concerns your readers and the general public. The business has had its advocates since an early day in our history, and silk of superior quality has been making for more than a century past. Innumerable obstacles have retarded its progress from the beginning, but enough has been done to establish beyond cavil the fact that the United States in climate and soil, and *all* their natural facilities are peculiarly adapted to the production of silk—and our people equally adapted to its manufacture into the most beautiful and finished fabrics of which the article is susceptible. I believe there are not *ten men* in this nation, who, if they have examined the subject with care, will dispute this position. It has been too often and too

arts and occupations with which their citizens are already familiar, but offer every consistent encouragement for the introduction of other and new branches of industry which may be made to contribute to the supply of their own necessities and luxuries, or produce articles valuable for commerce. It is pre-eminently important that, "We, the People of the United States," by the blessing of heaven the most free, the most popular, the most thriving nation of the earth, should *live within our means.* If this is good policy for individuals and corporations, it is infinitely more so when applied to States and nations. Well would it have been for us had we long ago conceived, practically, the importance of this great truth. Land and labor are with us the only legitimate sources of wealth, and our evident interests demand the exercise of such a policy as shall secure the steadiest employment, and lead to the development of these, our *natural capital.* Unpardonable disgrace should attend indifference or neglect in these respects. Unemployed labor, or labor injudiciously or unprofitably employed, should be considered a calamity as carefully to be avoided as famine, pestilence, or war.

We cannot conceive of greater inconsistency than that of sending from three to fifteen thousand miles for any article of our consumption which our own labor and skill, in the appropriate use of means which nature has provided might create. And yet it cannot be denied, this *monstrous incongruity* has attached itself to our government and people ever since our independence; and that in reference to an article of immensely more value in the aggregate than any other product of human industry.

That article is Silk, the beauty and richness of which were not overprised when in the reign of Tiberius (A. D. 14) its use was restricted by sumptuary laws to women of rank and fashion, to whom the considerations of cost were trifling; or, when (A. D. 222,) the famed voluptuary of Syria, Heliogabalus, in the extremity of his extravagance as charged upon him by Roman authors; he wore a *halosericum*, a garment made entirely of silk; nor, when its purchase required the payment of its weight in gold, which was assigned by Aurelian (A. D. 273) as a reason for his refusing his empress so great a luxury. This great mistake has cost us *hundreds of millions of dollars*, and continues every year to extract from us $12,000,000 to $15,000,000 of our best money.

Now all this might have been avoided had we adopted the principle here inculcated. But for this political insanity we should at this day have realized the prediction so often made, that we should become "the greatest silk producing country of the earth," supplying

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amply demonstrated under the most untoward circumstances to admit of a single doubt.

I herewith transmit the manuscript copy of a brief treatise on the culture of silk, which has been prepared in accordance with your expressed desire.

In the hope that it may be instrumental in awakening favorable public notice; and turning to this enterprise the attention its importance demands, it is respectfully submitted by,

Sir, your most obedient servant,

A. C. VAN EPPS.

our own demands not only, but exporting largely of the raw material to Europe. With our national treasure unembarrassed, and our citizens generally engaged in remunerating pursuits; the addition of new staples seems not so imperative, although sound policy would *then* demand it, but the fact is far otherwise. The absorbing question among politicians for the last three years has been, how shall we increase the *revenue* of the country? And how has this question been disposed of? Has it been settled to the interests of the government, the content and prosperity of the people? Has any thing been proposed likely to effect the object?

An alteration of the postage laws has been resorted to, and the duties on imports changed—some contending that a *high tariff*—and others a *low tariff*—or *no tariff at all*, would better answer the end in view; but still increasing embarrassment is the cry—and for aught we can see, must continue to be—who knows how long?

We must have a system of postage agreeable to the people, and duties so arranged as to favor home productions and manufactures to the fullest extent—but after all, we must fall back upon the *pockets of the people;* for if there be not gold there, nor in their hands the means to produce it, we look in vain for it in the treasury, from *any* and *every* channel.

If then the profitable employment of the citizen and the prosperity of the government are so nearly identical, it becomes at once an important inquiry whether the energies of our people are fully developed; and if not, what new object of industry can be adopted with a view of increasing their staple products and augmenting their income. These questions have received a good share of attention, and under improved systems of cultivation which have been introduced, our lands have yielded an increased abundance—with a corresponding increase in their quality and variety. The culture of Silk, however, by far the most important subject claiming our attention at the present time, has been almost totally neglected by both government and people. It is the object of the following essay to present this subject anew to the consideration of our people and the regard of the government; and we can but believe, that the representations here made, and the arguments adduced, will have the desired effect. The writer has been so long and so deeply interested in this subject, that it would not be strange, if in the expression of his views some extreme opinions should be advanced—but we believe no such *extremes*, should they occur, will be found detrimental to the general good. It has been our aim to render every part of our work as correct and practical as possible. All the sources of information to which we have had recourse are of the most established and reliable character.

We would not close our remarks here, without expressing our gratification that the pages of the Commercial Review have been most generously offered for the discussion of the Silk Question. We rejoice exceedingly that so popular and influential an instrumentality should at this crisis come forward for the advocacy of a great and noble enterprise in which the whole nation is interested. Its circu-

lation too, being principally in those parts of our country where the business can be most readily introduced and carried to the greatest perfection; adds greatly to its value as a channel of public communication. It will afford us much pleasure to answer, as we shall be able, any inquiries which this treatise may elicit, and to aid in every possible way the advancement of Silk culture *at the "South and West,"* and *generally.*

The discovery that the web of the *silk worm* could be converted into fabrics; and that this uncomely insect could be made to pay tribute to the necessities and luxuries of mankind, was second to none other recorded in the history of the world. When the length of time during which silk has been made and used, is considered, and the great value always attached to it, it is impossible to conceive the immense aggregation of wealth which has been involved directly or indirectly in its production, manufacture and employment as an article of apparel. If we combine all other substances ever employed for the raiment of the human family, their value can hardly exceed, if indeed it equal, that of the single article of silk.

When *the empress Si-ling-chi** was watching the curious operations of this insignificant insect in the forests of Northern China, over *four thousand* years ago; and even when she succeeded in domesticating the worm, unwinding the fibre and converting it into an article of dress; she could have formed little conception of the variety of its subsequent uses, or the extent to which it was destined to mingle in the commerce of nations then unborn, and in portions of the earth unknown for many centuries afterwards. It is almost incredible *now*, with the statistics of *four thousand five hundred years* before us, that, from the eggs of an insect so minute, that at its hatching, thirty thousand scarcely weigh one ounce; should originate an article of such unequalled magnitude as that of Silk. Millions of persons are employed in cultivating the mulberry tree and rearing the silk worm; and other millions in the operation of filatures and manufactories; while thousands of ships, and magnificent storehouses, with their numerous attendants, are required for its conveyance and distribution through innumerable avenues to the hands of its consumers; whose number equals the entire population of the civilized world—for *who does not wear silk?*

Very appropriately has the Empress, in whose hands this industry

* All who have ever written on this subject accord to this Empress, the wife of *Ho-ang-ti*, the credit of having first examined the cocoon of the silk worm with the view of ascertaining its nature, and the possibility of its being rendered valuable. Their own authors under the several dates noted, write as follows: "The lawful wife of the Emperor (*Ho-ang-ti*,) named *Si-ling-chi*, began the culture of Silk." (Book on Silk Worms.)

This great Prince, (*Ho-ang-ti*) was desirous that *Si-ling-chi*, his legitimate wife, should contribute to the happiness of his people. He charged her to examine the silk worms, and test the practicability of using the thread. *Si-ling-chi* had a large number of these worms collected, which she fed herself, in a place prepared solely for that purpose, and discovered not only the means of raising them, but also the manner of reeling the silk and employing it to make garments." History of China, by P. Mailla—written, according to the Chinese Chronology, 2602 years before Christ.

had its origin, been styled and deified as the *Goddess of Silk Worms*; and we can almost justify the yearly homage paid to this goddess by the Chinese peasantry.

If the importance of this discovery was not at *first* realized, that they did not long continue ignorant on the subject, is apparent in the *fact* that it became at once the favorite pursuit of the most distinguished, and was introduced at each recurring season by royal example; and before it had time to acquire a name, it was surrounded by the government with every possible protection which the ingenuity of that jealous nation could devise. So successfully was this protective policy adopted and adhered to, that, up to the middle of the sixth century, it does not appear to have been supposed, beyond the confines of China, that silk was the product of a worm. Even the Persians, who had long controlled the carrying trade between China and other countries of Asia, do not appear to have dreamed of the origin of the precious commodities composing their commerce; and, but for the most ingenious stratagem by which it was wrested from them, it is difficult to determine how long it must have remained a secret. Towards the close of the sixth century, this product of the Chinese had become so universally admired, and so highly valued, that, notwithstanding the exorbitant prices exacted for it, it was impossible to obtain a supply. With a view of opening a new medium of communication, Marcus Antoninus undertook to supplant the Persian monopoly—but his embassy was rejected, in common with all other applications for foreign intercourse by any except those whose integrity had been thoroughly tested and approved. This movement excited the spleen of the monopolists, and its failure encouraged their avarice. The passion for dress which the Romans carried with them to Constantinople, served to increase the demand for silk beyond all precedent—and the Persians, in their dreams of gain, carried their impositions beyond all endurance.

This was a crisis of the greatest interest in the history of silk, and calls for particular notice. An eminent author, in reference to the same period, writes as follows: "A war with the Persians occurring in the reign of Justinian, induced that monarch to obtain supplies from a more eligible channel. Through a deficiency of the requisite experience and qualifications necessary for so difficult an undertaking, Elasban, King of Axuma, and Esimiphæus, Governor of the Hermorites, in Arabia, to whom, for this purpose, Justinian had made application, failed to fulfil their engagements; and silk, in consequence, rose at Constantinople to a height before unknown. This the partial supplies usually afforded by the Phœnician manufacturers, would have considerably relieved, had not Justinian, with a blind rapacity, that, in his aim to augment the revenue, effectually defeated itself, imposed heavy duties on the importations, which became absolutely prohibitory. In consequence, the merchants were ruined, the scarcity of silk was equivalent to absolute privation, and the failure of a revenue, whose increase was contemplated by Justinian, was a practical sarcasm on his avarice."

Thus we have, in the history of silk, arrived at a very important

and memorable crisis. Silk was produced, even from the earliest ages, in regions congenial to its culture, where, in consequence of the blessings it confers, the inhabitants proclaim themselves *celestial*, but assidiously withhold all knowledge from what the benefit is derived.

An insect, as if in some land of enchantment, labors. spins, and dies; and without leaving itself even a sarcophagus, bequeaths its house, more valuable to man than the proud monuments of the Egyptian architect, its robes, more golden than Jason's fleece, and all its estate, by the bale and cargo, to the men of Hesperian climes, who know not either of its existence, or the mystery of its operations. The elegance of the fabrics is admired by all; Europe invites the commerce; a difficulty unmanageable in the ordinary course of things occurs; a crisis arrives; THE OLD EPOCH IS CLOSED, and a NEW ERA, most important in its history, ARRIVES. How frequently has relief come, not only at the moment of extremity, but by the most unexpected means. Justinian failed in his diplomatic application to the Arabian princes, as well as his predecessor had done at the Chinese Court; and his very attempt to force a trade was the means of its almost total extinction. But how could it have been foreseen that what emperors, ambassadors, and merchants failed to accomplish, would be effected by means so unlikely as by two comparatively obscure Nestorian monks? The preachers of the doctrine of Nestor, exiled by the government of Byzantium, had fled to India; and missions, convents, and bishoprics, by their patriarch resident in Persia, had been, according to the testimony of Cosmas, established in every direction. Two of the monks penetrated to the country of the Seres. With curious eye they had observed the dress of the Chinese; the manufactures of the silken fabrics; and the millions of insects, whose education was the care of queens, converting the leaves of a tree into silk. All the manipulations requisite, from the embryo state of the little animal, to the production of the costly material, were marked with intense interest.

The secret was out! two monks in possession of it—the knowledge to benefit myriods was entrusted to two—the perils of traversing a vast continent were yet to be encountered—a risk was to be incurred—no insurance was affected, but that of Providence: thus all was safe; and the two monks, our benefactors, bequeathed a mystery hid for ages, as a legacy to a western hemisphere. Aware of the solicitude of the Europeans on this subject, the monks repaired to Constantinople, and first revealed to the emperor the secret that *silk* was produced by insects, whose eggs might be conveyed to his dominions. Were we to indulge in the conjecture what, most naturally on such a momentous occasion, was the passion chiefly excited in Justinian, at this important juncture, when a report, than which none could be more interesting to the secular concerns of man, was first announced to his ears, our charity might have inclined us to point to philanthrophy, had we not ascertained the character of the man. With him, on several occasions, self was a universe, and all within it his minions, whose interests were to be consulted precisely to the point

where they concerned his own. By the promise of a great reward, the monks were induced to return to China, elude the vigilance of their jealousy, obtain the eggs, and to confine within the narrow precincts of a hollow cane, what was subsequently to create machines and factories, fill warehouses and ships, and become inexhaustible mines of wealth to nations. They succeeded; and in the year 552, they were in Constantinople, and their cane, like Noah's ark, contained a family, whose posterity are now filling regions wider than those peopled, within the same time, by Shem, Ham and Japhet. "The insects thus produced" says Lardner, "were the progenitors of all the generations of *silk worms*, which have since been reared, in Europe and the western parts of Asia;"—to which may now be added America and Africa—"of the countless myriads whose constant and successive labors are engaged in supplying a great and ever increasing demand. A caneful of eggs thus became the means of establishing a manufacture which fashion and luxury had already rendered important, and of saving vast sums annually to European nations, which in this respect had been so long dependent on, and obliged to submit to, the exactions of their oriental neighbors."

No sooner is this new and interesting colony in Europe, than the avarice of Justinian seizes the cradle of the infant concern. His own treasurer had the control, the monks the direction, weavers brought from Tyre and Berytus, were the creatures of the new monopoly, and his became the prerogative to fix the price which his subjects should pay for the indulgence of their vanity. The price of silk, by this means, became eight times more exorbitant than before the introduction of the silk worms; an ounce weight of a fabric of *common colors* could not be purchased for less than six pieces of gold, but the royal purple was of quadruple value. Fortunately for the public good, the oppressors of mankind live not forever: Justinian died; and the monopoly ceased. The people of western Asia and Europeans discovered that, neither the mulberry tree nor silk worm, wanted either Chinese climes, or the care of a Justinian to foster them. Mulberries were planted in all directions; and the insects fell to work with haste as eager, as if they had never known that their ancestors had been silk worms royal to his highness Justinian. After the death of this emperor, (A. D. 565,) we find the culture and manufacture of silk transferred to Greece, especially Peloponesus, and to the cities of Athens, Thebes, and Corinth. Soon after, the Venetians entered into commercial relations with the Grecian empire, and conducted the carrying trade, for several centuries, to the western parts of Europe. Such was the estimation in which this manufacture was then held, as appears from the example of Charlemagne in the year 790, sending two silken vests to Offa, King of Mercia, that it was considered worthy of being made a royal gift. Greece, notwithstanding all discouragements consequent upon the continued and rapid decline of the Roman empire, continued to excel all other nations of Europe in the quality of her manufactures. She alone, for near 600 years, possessed the valuable breed of silk worms; soon produced wrought silks adequate to her own consumption; a recourse

to Persia for a supply ceased, and a material change followed in her intercourse with India.

We deem it unnecessary to dwell at greater length here upon this part of our subject, and shall therefore give our attention to that which will be more interesting and profitable: the means by which the Chinese attain so much perfection, and secure such uniform success. Disease amongst silk worms there is so uncommon as scarcely to have attracted the attention of their authors; it would hardly be supposed from what they say, that the silk worm is subject to ailments of any kind. It is positively asserted that they do not lose one worm out of a hundred by disease; which seems to have been a matter of much surprise in France, where the most successful establishments calculate upon a loss of fifty per cent. It is very reasonable to suppose that, in this extended experience, we shall find some peculiar processes by which they are secured against the casualties common to other countries.

The very circumstances under which the silk worm was abstracted from China, precludes the possibility of any very extensive and accurate knowledge of its management, and every attempt to obtain such information since has been fruitless until within the present century.

When the spirit of *inquiry* and *inquisitiveness* can no longer be controlled, and *valuable secrets* are not safe through the possession of walled empires. Access has at length been obtained to Chinese libraries; and works treating extensively and minutely of this entire subject have been carefully reviewed. They form a part of their works upon agriculture, of which there are several hundreds, included in a collection of one hundred and sixty thousand volumes of the most valuable publications in the Chinese language; but among all this immense library and the twelve thousand volumes composing the royal library, there are but three books devoted exclusively to silk culture as a distinct branch of their industry. These were written long since and have passed, in fact, through a new edition within the last two or three hundred years. To the essential parts of all these works we have incidental access through recent translations into the French language by M. Stanislas Julien, at the instance of the Minister of Public Works, of Agriculture and Commerce; to which is prefixed a valuable introduction by M. Camille Beauvais. While in manuscript this translation underwent a most critical examination by M. Louis Hebert, whom the French government employed for some time upon the coast of China with the special design of studying the methods of those countries, and of bringing back any precious varieties of mulberry trees and silk worms which were unknown to French culturists. This with other works of great value treating of this subject, are included in a collection of one of these,* to which particular reference will be made in another part of this treatise, is work on "Filatures," by M. Ferrier, inculcating precisely the views we have entertained and urged for the last three years,

* More than a hundred volumes of valuable French works recently presented to the American Institute, by M. Vattemare.

and which alone can secure the success of silk culture in any country. From the work first named, together with a book of Chinese painting prepared for Dr. Stebbins, of Northampton, Mass., which have been fully explained to us by *Sum-Sing*, a Chinese artist of the Chinese Junk recently in this city, who is entirely familiar with the production of silk in his native country; we shall be able to give a very full and correct exposition of the principal methods practiced in China. We shall do so more in compliance with a general curiosity to know of their management, than from faith in the superiority of their practices. In their cultivation of the mulberry tree and treatment of the worm—we can learn much; but their care of the eggs which we shall notice elsewhere, consists of a routine of unmeaning attentions, which one would suppose must prove entirely destructive to the embryo worm.

In every branch of the business we may learn much from their excesses. If they are *extremely* careful, it will be found a less dangerous error than the irregular and *careless* manner in which it has been managed in this country as well as in many parts of Italy and France.* We shall first notice their treatment of the mulberry. No expedients have been left untried that were calculated to lead to the general propogation of this tree. In some provinces men were compelled to do it; while others succeeded better by liberal bounties. Hence we read: Tchin-in, being Governor of the province of Kiente, ordered every man in the nation to plant fifteen feet on each acre, with mulberries.

The emperor gave to each man twenty acres of land, on condition of their planting fifty feet with mulberries; (*Memoirs upon provisions and Commerce.*) When the agricultural labors are terminated, or when rain prevents persons from working in the fields, every thing must be taught relative to the mulbery-tree. (Annals of Northern China.)

The emperor *Hien-tsong*, who ascended the throne in 806, ordered all the inhabitants of the country to plant two feet with mulberries in each acre of their grounds. (Annals of the dynasty of *Thang*.)

The first emperor of the dynasty of Song (960) promulgated a decree to prevent the destruction of the mulberry and jujube trees. (The leaves of the latter may be used for feeding silk worms.) [History of the dynasty of *Song*.] If among the people, men are found who grub up the uncultivated ground and plant a great quantity of mulbery trees. only the ancient tax shall be exacted from them. (Same work.)

Their works abound with similar passages showing the care ever exercised to promote the most extensive growth of the mulberry tree of which several varietes are used corresponding with the character of the climate and soil, of the province for which they are designed. The most common and generally approved appears to be a white mulberry bearing an abundance of thick, glossy leaves about as large as a man's hand. In preserving seed, the largest fruit is selected

* And the fact that success has attended the efforts of culturists in this country in spite of all hindrances, is an evidence of its uncommon congenality.

and both ends cut off, the seeds of the middle only being considered fit for use. These are washed, dried in the sun and immediately planted in a bed of rich earth, previously prepared for the purpose. These are kept carefully watered and free from weeds. In the spring the small trees are taken up and transplanted in grounds suitably prepared. They are planted in rows four feet apart each way, and cultivated with a hoe and spade. In the spring of the year, when they are considered sufficiently matured, they are again removed and planted into permanent orchards, where they are set about thirty feet apart. Another mode is to gather the fruit, which is ripe in June, crush the pulp with the hands, and wash several times; when the seed is separated it must be dried in the *shade*. Ten acres of fertile land, or better, land for a long time uncultivated is prepared, where the mulberry seed, mixed with millet seed, is sown and left to grow up together. The millet ripens and is removed by the reapers and the mulberries either removed or allowed to remain upon the same ground.

The tops are cut off and the foliage from the shoats starting the following spring is used for feeding. Another writer says in substance as follows: When the time for sowing has come, the seed must be mixed with ashes from the branches of the mulberry tree, and then soaked until they become soft. The next day the seed must be washed with care, and those that float rejected. The full seed must be exposed to the sun until the water absorbed is entirely evaporated, when they are sown and do not fail to flourish. In another work the subject is treated differently still conflicting somewhat with the preceding. We can give only the ideas. None but new seed should be used. This should be sown in the shade or covered with a sort of tent. The shade of hemp is unfavorable, that of millet still more so. Between each plant five to seven inches should be left, and kept carefully watered until they attain the height of three feet, the shade should then be removed. In November the trees should be cut even with the ground, dry grass spread over them and burned; taking care not to have the fire too hot or long continued. The ground is then covered with decomposed vegetable manure. In the spring the surface is raked clean and the trees kept well watered. Fine shoots spring up early, many of which, by fall, attain the height of six or seven feet. A distinction is made between these and a smaller growth, and each is treated in a different manner: the larger growth being generally prefered to those of a still larger variety—and are termed dwarf mulberry trees. The ground to receive these is prepared as follows: The location must be well cultivated and manured. In one acre about two-hundred and fifty holes are dug each two feet square and two deep, into which is spread about a half bushel of well rotted manure, mixed with an equal quantity of earth all made soft by water. Into this compost the tree is firmly placed, the top of the stalk cut off even with the surface of the earth and the hole filled with well decayed earth.

The next day this is tramped down so as only to leave the hole half full; the remainder filled and slightly packed. A small hill is made over the top of the stalk, which must previously be burned

with a hot iron, so that the shoots will all start from buds under ground, this giving them greater strength and security against winds and storms. Several buds will send out trees, and in order that they may not become too thick, only two branches are cut down close to the ground every year, and earth covered over, so that all the new sprouts of the succeding year may start from buds under the ground. As the roots become strong, a greater number of branches are allowed to remain, until, in a few years an immense mass of foliage is produced, and the quantity of roots formed, is astonishing.

The plantation of Dr. Stettins, of Northampton, Mass. is a good illustration of this method of culture. He has a small orchard of Canton mulberries, which from June to November present a most beautiful sight; and the amount of foliage produced is incredible.

This variety of mulberry was procured directly from China—for Dr. S., and is doubtless the same variety preferred in the best silk producing districts of that Empire. It was recognized as such, by a native Chinese, who recently examined it—pronouncing it the *same*, only presenting an appearance of greater thrift and perfection. It corresponds very nearly to the *Moretti*—if indeed, it be not the same, which some of our best judges believe.

From these seedlings, cuttings are taken; and in this way the mulberry tree can be multiplied indefinitely. A general preference is to be given to this mode of propagation, as the variety of the tree can thus be retained in its vigor. In this something like the following practice is observed. The ground is selected and prepared for the cuttings, as for trees just described; and soon after the buds begin to start in early spring, branches are cut about one foot in length and each end burnt. A part of the buds if there are more than three or four are removed. The only danger to be guarded against, as attending this method, is the effect of the suns of mid-summer—but if proper care is taken, a single plant is seldom lost. It is a pretty general practice to plant a few hemp seeds on the sun side of the hills to afford a shade. The following spring the trees with the cuttings attached, are taken up and removed to the grounds where they are to remain, and there planted with the same care as before, in rows about twenty-five feet apart, and ten feet apart in the rows. The ground between the rows may be ploughed; but never beetween the trees. The foliage is used the second year. In another work a more particular account is given nearly as follows: Towards the end of Autumn when the cultivators have much leisure, the grounds intended to be planted with mulberries the following spring, must be selected and all the holes dug and supplied with manure, so as to diminish the work of the spring when so many other things demand attention. The grounds should be raised on the south in order to retain the snows of winter and the rains of spring. In the last month of the year (January) the branches intended for planting in the spring, should be cut and the wounded part scarred by passing it quickly through the fire. They are then bound into bundles of about forty five each, and laid in a hole, prepared for the purpose, about the length of the trees, and three or four feet deep. Bundles of rice straw are placed btween those of the trees. These deposits of bran-

ches are covered with a thick bed of earth, and thus preserved in perfect safety. After *Tchun-fen* (21st of March) the holes prepared in the autumn, are opened—manure, earth and water mixed in, and twenty or thirty millet seeds planted at the south side. The trees are then removed for planting. Each branch is bent up in the shape of a hoop and tied in that position by a straw rope; and thus planted in the middle of the hole, and covered with three or four inches of earth. If the buds are started two or three inches they are covered deeper, and the earth packed firmly around them with little hillocks of light earth on the top. They must be shaded and kept moist. The trees from the buds grow rapidly and make it necessary to remove some of the lateral branches. At three years old they become fine trees. Some persons who wish dwarf trees, cut off only the extremities of the branches and plant them upright, so that the top just arises out of the ground. When this is done, several twigs are put together and thus planted. Others place the boughs in a raddish and plant it in a small square hole. These thrive well.

We cannot notice further this part of the work though much more is said, but with immaterial variation from what we have already given. These observations give a general impression of the plans pursued as well as they can be determined from this translation, which is in many parts quite crude and indefinite. None of the practices described, strike us as possessing peculiar excellence—but *one* important principle is carried out by every cultivator; a principle very imperfectly appreciated amongst us—it is, that the mulberry tree, to produce good and abundant foliage, must have the advantage of rich soil and careful cultivation. They not only select the best lands for their plantations but manure plentifully besides. Liquid manures are highly recommended and extensively used; also the sweepings of the cocooneries, ashes of rice straw, various aquatic plants, and paste made of beans, hemp and cotton seeds—besides the ordinary manures. Great use is also made of the sediments of canals and ponds which are often drained for this purpose. The plantations are generally surrounded with walls or hedges to prevent injury by animals. The earth around the trees is kept perfectly clean and loose, by frequent weeding and the use of the hoe and spade. No noxious plants or trees are allowed in the enclosure. Nighboring cultivators not unfrequently associate together for the purpose of managing the business to better advantage by a division of labor. Their orchards in such cases are included in one large enclosure proportionally subdivided by light hedgery, to prevent disputations, to which they are so much inclined. Grafting and budding are practiced to a considerable extent and are thought greatly to improve the quality of the foliage. The leaves thus produced are larger and thicker and seem to contain less unwholesome juice.

This requires a good deal of trouble, but we are inclined to think the plan a good one, where it is intended to have permanent orchards. It is being extensively introduced in the south of France.*

* The first nursery we have ever seen any where was that of Mr. L. P. Finiells in this city. These trees were grafted white mulberries imported from the Cevennes Mountains in France, and for some time occupied a garden in Broadway; and were removed a year or two since we think, to some part of Long Island.

The construction of feeding apartments next claims our attention. These are generally built in secluded locations and near or over the water when it can conveniently be done; that they may have the advantage of extreme quietness, and freedom from impure air and injurious insects. They are so constructed as to admit of the most perfect ventilation and yet as perfectly to prevent the admission of external air, when unsuited to the health of the worm: and always so as to govern the degree of light.

The greatest importance is attached to a uniform temperature, and means provided for securing it. In the center of the building is constructed an oven, of which the following is a description. In the middle of the house, a hole must be dug, of which the size must be proportioned to the dimensions of the house.

The ordinary size of this hole is about four feet square. On the four sides, a square brick wall, cemented with mortar, must be raised two feet in height. Cow dung, well dried, must be taken and reduced to powder, and the bottom of the hole covered with a bed of this powder three or four inches thick. On and in the middle of this, a layer of small pieces of dry wood must be spread, at least five inches in diameter, which has been cut in the last month of the year. Mulberry, elms, acacia, or any kind of hard solid wood may be used. Upon this another bed of powder must be spread, well beaten down, so as to fill all the openings between the sticks; for if any space be left, the fire would produce a flame which would be injurious, besides causing too rapid a consumption of the fuel. With these alternate layers, the hole must be filled and packed down as tight as possible, and then rounded up with the same. Seven or eight days before the hatching of the worms, live coals must be put on the top and covered over with hot ashes. The mixture readily takes fire, and emits, for six or seven days, a black and yellow smoke. One day before the hatching of the worms, the door must be opened to dissipate the smoke, and then carefully shut. From that time the whole contents of the oven are on fire, emitting no smoke, and can be preserved for a month or two without becoming extinguished or materially diminished. The warmth produced is mild and agreeable, and it can hardly be perceived that there is a fire in the apartment. It is well to surround the top of the oven, to the height of one or two feet, with a high brick wall, so that the heat may ascend to the middle of the room, and there spread in an equal manner. This will also prevent those persons who attend the silk room at night from falling into the oven. The house being constructed of dry materials, readily becomes warm and retains the heat. When the worms are to be removed from the nursery, the old paper on the windows must be replaced by that which is perfectly white and clean. The windows are covered with screens or mats, to prevent the escape of heat, and regulate the admission of light. Connected with the main building is a nursery, carefully constructed, for hatching and feeding the young worms. It is generally built fronting the south. These are fitted up with numerous small frames and shelves, and only light enough admitted to distinguish the moulting from the feeding worms; and this is obtained mainly through dormer win-

dows above the frames. Even with the ground, pipes, or air conductors, communicating with the outside, must be placed at regular intervals, and arranged so as to be opened and shut at pleasure. The nursery building is also provided with an oven similar to the one described, only smaller, and also a small stove in each corner, in niches prepared for the purpose.

The internal arrangements for feeding do not vary much in different provinces. We shall refer to only two, which are more generally used than any others, as they are considered the best. One consists of frames two feet long and two feet wide, supported at the ends by slats fastened to upright posts extending from the floor to the beams or ceiling. The one at the bottom prevents the dampness of the ground from ascending, and the one on the top screens from the dust of the apartment. The other arrangement, which appears to be an excellent one,—especially for nurseries,—is represented in the cut, which will be given in next No. of Review.

The construction of this frame is very simple; the hurdles, which are made of split bamboo, very light and easily handled, admitting an unobstructed circulation of air through and around the frames.

With this reference to the feeding apartments, we shall notice, very briefly, the methods of hatching, feeding, and the general management of the silk worm from the egg.

The time of hatching corresponds very nearly with that of Virginia, and the eggs are retarded or forwarded to correspond with the character of the season. The care bestowed upon the eggs by the Chinese is almost incredible, and differs altogether from the practices of this country, and we can hardly be induced to attach to them any advantage.

From about the first of December up to the time of their hatching, they are subjected to repeated washings in brine and river water.

To these baths their authors attach great value, as securing uniform hatchings and vigor of constitution. The subject deserves a passing notice in this place.

In a work entitled, HOANG-SING-TSENG, the author observes: The eighth day of the last moon, the eggs must be dipped in water where the ashes of the mulberry branches have been boiled, or the ashes of grass. They must be taken out at the expiration of one day. The twelfth day of the second moon, a bath must be given to the eggs, on the morning of the period called *Thsing ming*, (5th of April;) then they must be wrapped up in cotton paper, and deposited in the kitchen. Wait until the mulberry leaves are as large as a teaspoon, then envelope the eggs in cotton; covering them at night with garments that have been worn during the day; and in the morning wrap them in blankets.

When the eggs are hatched, the worms must be warmed by artificial heat; but so long as they are not out of the egg, they ought to be well taken care of, and hatched by the heat of the fire. When it is desirable to soak the leaves of paper, covered with eggs, the ashes of the mulberry must be used; the leaves should be moistened and

powdered with the ashes. Afterwards they must be rolled and soaked in water where a certain quantity of salt has been dissolved. If the rolls of paper swim, they must be kept under water by placing them under a China plate.

The papers ought to be taken out on the twenty-fourth day. They must then be washed in running water to remove the ashes. Afterwards, they can be hung up in the cool air, and the eggs will hatch in due time. The twelfth day of the second moon, leaves of the plants called *thsai* and *ye thsai*, blossoms of the leek, peach tree, and white beans, must be taken and crushed in water, and this used as a wash for the eggs.

Many persons preserve the eggs in bamboo boxes, where they are exposed to all the changes of the atmosphere. If they are subjected to sudden transitions from cold to extreme heat, or the contrary, it produces fatal results. The worms thus injured in the egg, have a yellow appearance on hatching, and are never worth the trouble of raising. They may be compared to a child that has contracted disease in the womb. At its birth it is weak and feeble; and such innate ailments generally extend through life.

When one wishes to preserve eggs by this method, the papers should be spread on bamboo boards, secure from the sun or wind. They should also be covered with silk cloth, to prevent butterflies or insects from the cotton plant eating them. In the winter, when there is a body of snow, the leaves containing the eggs should be spread upon the snow for twenty-four hours, and then placed on the boards and covered as before.

When spring comes, they must be attentively watched, and every change noted, that their hatching be properly provided for. Powdered cimabar must be taken, diluted in warm water, and the eggs bathed in it. The water should be kept at the temperature of the human body.

Before the eggs are hatched, the papers should be weighed, and the exact weight written on the back of the sheets. When they are hatched they should not be separated from the paper. Many persons, as soon as the worms appear, detach them from the paper by means of a small broom or quill; but these little beings, as delicate and slender as a hair, or bit of silk, cannot support the wounds given them by the broom or quill. The better way is to cut some tender leaves into small shreds, and lay them carefully on the worms, to which they will speedily attach themselves, and can be removed without hurt.

The business of the feeding is entrusted to persons who confine themselves exclusively in the silk rooms. These attendants are required to be scrupulously clean and particular, and to study every want of the worm, and meet them with a prompt and appropriate supply.

The following things are named as being offensive to the worms, and to be avoided:

1st. Silk worms do not like to eat damp leaves;

2d. They do not like to eat warm or wilted leaves;

3d. The newly hatched worms do not like the smell of fish fried in a pan;

4th. They do not like to be in the neighborhood of persons who pound rice in mortars;

5th. They do not like to hear strokes on sonorous bodies;

6th. They do not like men who smell of wine to give them food, or transfer them from place to place;

7th. From the time they are hatched until maturity, silk worms dread smoke and odorous exhalations;

8th. They do not like to have skin or hair burnt near them;

9th. They do not like the smell of fish, musk, or the odor of certain herbaceous animals, such as the goat, &c.;

10th. They do not like to have a window, exposed to the wind, to be opened during the day;

11th. They do not like the rays of the setting sun;

12th. They do not like, when the temperature of their habitation is warm, to have a sudden cold or violent wind introduced;

13th. When their habitation is cold, they do not like a sudden change to extreme heat;

14th. They do not like dirty or slovenly persons to attend them, or enter their room;

15th. Care must be taken to keep all noxious effluvia and filth distant from their apartments.

When the worms are first hatched, they are fed with the most tender leaves, cut into fine shreds, and lightly spread over them with a sieve.

In the space of one hour (two of ours) they must receive four meals, making forty-eight feedings during the first day and night. Feed must be given, without fail, both day and night. If this course is pursued, it follows that they sooner attain their maturity than if they are neglected. When they can be made to mature in twenty-five days, the worms of a given space will furnish twenty-five ounces of silk. If twenty-eight days, only twenty ounces can be obtained. If the time be one month, or forty days, only ten ounces will be made. In feeding, the attendants are required to visit every frame with the greatest attention, and feed with perfect uniformity, that the worms of each day's hatching may not become irregular in their moultings.

The feedings are less frequent as the worms increase in size. It is common, beginning when the worms are very young, to use rice flour. It is sprinkled lightly over the frame immediately after the worms have been fed. When this is done, the leaves require to be dampened.

Dried mulberry leaves, finely powdered, are sometimes used in the same way. It is thought to strengthen the worm, and cause it to make a more perfect cocoon. One of the most accurate works, treating of this subject, says:

The leaves which are given them ought to be neither wet with dew nor dried in the wind or sun, nor impregnated with disagreeable smells; for as soon as they have fed upon such leaves, they will contract diseases. If care be taken to preserve, in advance, a sufficiency of leaves for three days, there will be nothing to fear from long rains nor a want of food.

The space of one day and night is, to the silk worm, like the four seasons of the year.

The morning and evening answer to spring and autumn, and the middle of the day and night to summer and winter. In these four periods of the day, the weather is never the same. When a good fire is preserved in the silk room, great attention should be paid to keep it of a uniform temperature during all parts of the day and night. The matron should wear only a single garment, and regulate the temperature according to the sensation of heat or cold she experiences. If she feels chilly, she will judge that the silk worms are cold also; and so when she experiences oppression from heat, will the worms be affected. An increase of heat immediately after feeding encourages the appetites of the worms, and causes them to eat with great avidity.

To effect this, a long stove, placed on a hand barrow, is used. When the worms have been fed, and had time to ascend the leaves, this stove is carried by two men through the aisles, until a gentle heat has diffused itself among all the hurdles. The fire in this stove should consist of burning charcoal, so as to prevent smoke, and covered with ashes, to prevent too brilliant a flame. When the worms have finished their eating, the stove must be carried back. This is repeated at each feeding, if the air of the room is in the least chilled.

The various moultings are attentively observed, and every preparation made for the necessities of the worms. They are not suffered to remain upon their moulting beds for any length of time after their awakening; but are removed* promptly to fresh frames, covered with rice straw, crushed in a mill.

The rapid growth of the worms renders it necessary to remove and separate them, constantly, which is done with the greatest care and affection. Any neglect or carelessness may be followed by diseases and losses. The weakness and delicacy of the worms should never be lost sight of.

Entrance of the silk worms into the Cocooneries.

Who the worms indicate a desire to spin, they are removed to cocoon rooms, which are generally constructed separately from the feeding apartments. These rooms are provided with various descriptions of winding frames. As this has been, and is yet, a subject of much discussion and difference of opinion in this country—it claims at least a passing notice. A country so long engaged in making cocoons—must necessarily have acquired a pretty accurate knowledge of the best methods of spining—this would be our judgement of any other country, save China, and is doubtless true of them to some extent, notwithstanding their unreasonable adherence to ancient usages.

We have just said that the spining is done by distinct rooms. In the southern countries these are generally placed in the house, as

* In the removal of the worms, a frame of net work is used, somewhat similar to those used by many persons in this country.

fewer worms are there fed; and besides the early rains occurring at the spinning season, forbids their being placed in the open air. At the North, the rooms are larger and placed outside of the house, that there may be no obstruction in the circulation of the air. A dry and warm place must be selected, in order that neither cold nor dampness can penetrate into the interior of the cocoon rooms. When the worms approach their maturity, a fire must be lighted on the ground where the room is to be located, until it is perfectly dry; afterwards the remains of the fire and ashes must be swept away. One description of cocoon room is constructed as follows.

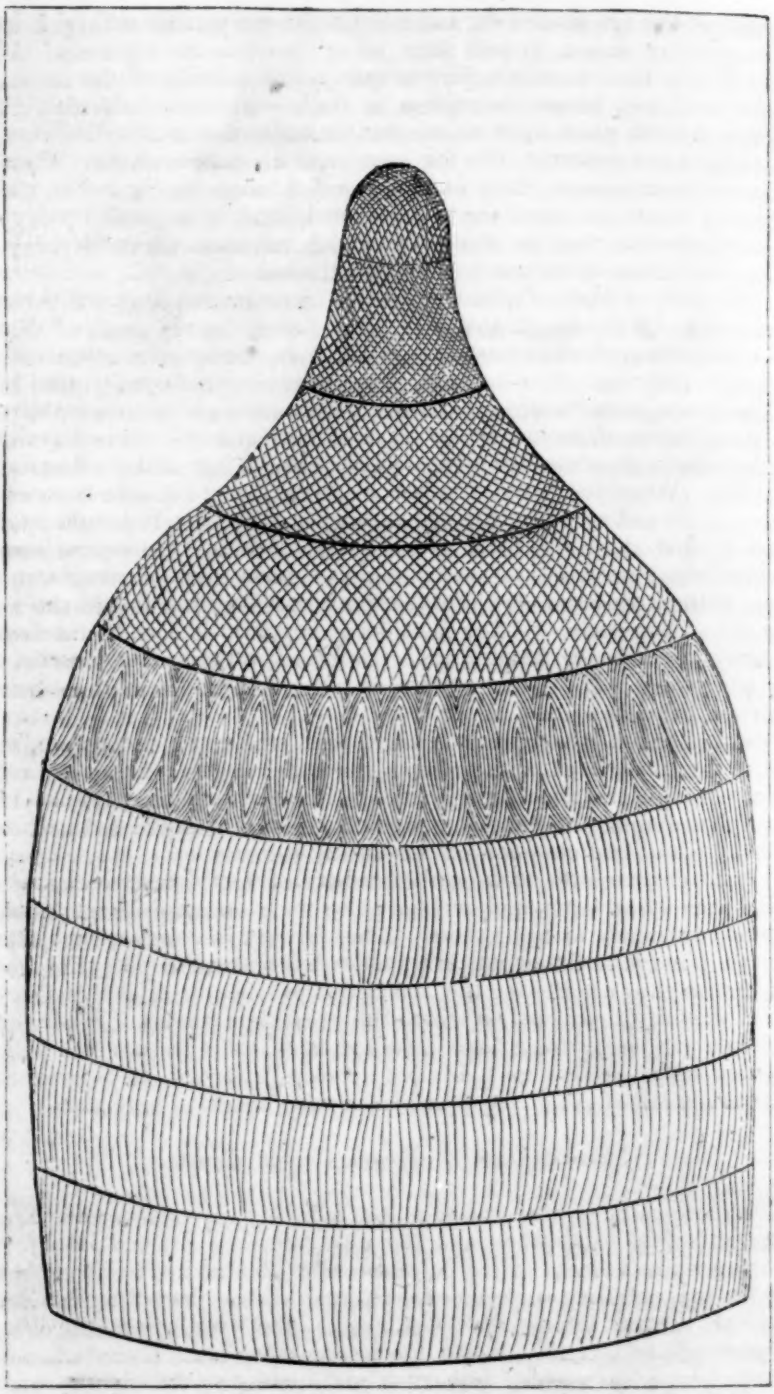
The floor is made of plank of the fir tree, six feet long and three feet wide. A frame, pierced with large holes, must be made of thin bamboo from which arrows are made. In these holes some rods must be inserted; then long and large bamboo branches, stripped of their leaves, must be croped above. The room must be covered with a frame work of woven reeds. The silk worms will here have a place where they can establish themselves in safety without fears of falling. When the interior is well arranged, where it affords necessary depth and security, the worms may be successively spread over it. At first, the frame must be a little inclined until the worms have voided their excremental matter which always precedes the formation of their cocoons; and afterwards, warmed with a small brazier, or pan of live coals. When they have begun to inclose themselves in their cocoons, the heat must be increased. They *must never stop* in their work. If the temperature be too cold they walk upon their silk and cease to spin.

Some persons, particularly at the South, where silk worms are fed more for amusement than profit, remove the worms, when they are ready to spin, to their own houses. They spread short stalks of dry plants upon the frames on which the worms were fed, and in these beds of branches they deposit their cocoons.

Another plan is to construct long sheds of light frame work, covered with straw mats, and in these place their cocooneries when the worms are ready to enter them. They are set in rows on each side with a passage in the centre large enough for a man to pass through. As fast as they are needed the rooms are provided with shelves covered with dry branches, on which the worms are placed. When the necessary number have been installed here, they are covered with double mats. These mats are not so closely formed as to prevent the admission of air. Artificial heat is recommended here also.

Touran-Tso, or Round Cocoon Rooms.

The cocoonery represented on p. 342, is highly valued by some. The center is first established and the circumference divided into five parts by pine boards. Five poles are then planted and tied together at the top, and then surrounded with rush mats. Dry branches are laid all around against the sides, against the mats where the silk-worms are to ascend. When the worms have been placed in, the lower part is surrounded with rush mats, and covered high up with straw in the form of a cove.



TOUAN-TSO, OR ROUND COCOON ROOM.

CHAN-PO.

Chan–Po.

This cut represents the cocooneries of the districts of *Kia* and *How*, where the best silks of China are said to be produced. This term signifies a frame covered with small protuberances or hillocks. The frames are woven of split bamboo reeds, and placed upon a stage or table, supported on each side by wooden pillars about six feet high. The small elevations are made of rice or wheat straw, cut of equal length and twisted together at the the top; and then placed upright on the frames.

It is necessary to cover the frames with a slight bed of short straw to prevent the worms falling through between the reeds.

At the bottom of this frame chafing-dishes filled with charcoal, are placed four or five feet apart. When the worms are put on the frame only a little fire is necessary to induce them to work, and they will not be seen to climb and move about wasting their silk. As they enter their cocoons the heat must be increased by the addition of burning coal to the chafing-dishes. As the silk is thrown out by the worms, it dries, and immediately hardens; which is the reason why the silk from these districts, so long retains its strength and receives such brilliant dyes, which is never the case, where the worms spin in a damp and chilly atmosphere, as is generally true of most other constructions for spinning. Another spinning frame recognising the same principle, and which is highly spoken of, is shown by the following cut.*

It is taken from a silk painting before referred to, as belonging to Dr. Stebbins. These frames are of bamboo net work, with interstices large enough for the formation of the cocoons.

They are intended to be placed within enclosed cocooneries similar to those described, and present peculiar advantages, as the worms are not suffocated by masses of branches; while the heat and air have free circulation.

The French provide for the spinning of their cocoons a "cabin" of the following description:

Take a round willow basket, which dress with brush wood, putting the wood round two-thirds of the basket, and leaving the other third open for putting in the worms, and to give an opportunity to clear away their litter. Then pull the ends of the wood together at the top, so as not to press too close upon each other, and so tie them with a little twine or pack-thread, to keep them in their place; after which you put a paper cap, pretty large, upon the top of the wood, it having been found that the worms are fond of making their cocoons under a cover of this kind; as it affords an opportunity of attaching some threads of silk to the paper, which enables them to fix their cocoons the more firmly in their place. In putting up the cabins, on the stage erected for this purpose, the two rows of brush-wood at the extremities of the stage are made much thicker than the others, especially for 6 or 8 inches above the stage or shelf, to prevent the

* The cut referred to here will be inserted with the next communication.—Ed.

worms from getting out at the ends and falling over the stage. In putting up the other two rows, you lay a piece of wood or reed across the stage for each row; and in putting up the brush-wood you make the first turn to the right and the second to the left; and so alternately, keeping the reed in the middle, which binds all fast. In dressing the stage with the brush-wood it is advisable to cover the pillars which support it, and to cover also the top of the stage with the same, that the worms may find a convenient hiding place wherever they wander. In constructing the cabins, great care must be taken to put up the brush-wood in such a manner as to allow a passage for the worms between the different branches, which however, should not be too wide; and it is well to make a great number of the points or buts touch the shelf, because it affords the greater opportunity to the worms to mount.

Many people at Montauban put roses or sweet smelling flowers upon the pillars which support the stage, and in other parts of the room, with a view to sweeten the air.

In forming the arches of the cabins, there is always a little opening at the top of each pillar, occasioned by the curve or top of the circle. Care should be taken to make this opening pretty wide, because it has been observed that the worms make choice of this opening to fix themselves in forming their cocoons. The cabins may, in this way, also be made to accommodate a greater number of worms. The most irregular and crooked brush wood will make the best cabins. (The scrub oaks growing in many parts of this county would make fine cabins.) The tops should be intertwined, thus forming as many interstices as possible. (The materials for the cabins should be ever ready, that whenever the worms show an inclination to mount, you may always have a house to place them in.)

When the worms have commenced their spinning, care must be taken not to suffer the cabins to be touched; because, when they begin to work, the first operation is to fix many threads of silk to different branches to support the cocoon, and keep it in a proper poise. If, by any means, any of these supports are broken, the worm finds his arrangements deranged, and, becoming at once discouraged, abandons his cocoon, and throws out his silk at random, wherever he goes. Such accidents sometimes occur, by worms working in the same neighborhood crossing each other, though this is not often the case.

It sometimes occurs that worms, apparently as good as any, linger on the shelves and refuse to mount, the reason of which seems not understood. Such worms, however, will generally go to work and spin vigorously, if placed in a good position, and become quite lively when exposed to a moderate increase of heat, which it is always advisable to have the means of producing.

The spinning worms should be visited with great care and frequency, that no diseased worm be allowed to remain among the healthy ones, to become putrid, and vitiate the atmosphere, which should, above all things, be pure and well supplied with a free circulation of air.

Much care is required that no worms be placed in the cabins un-

till they are thoroughly ripe, which is easily determined by those accustomed to them, as they will refuse eating, commence crawling, and assume a transparent appearance, resembling a newly laid egg. This is peculiarly the appearance of the head and neck.

We must here terminate our views of Chinese silk culture. What has been said has been culled from much matter on the various topics introduced. To include the translation wholly, would have been impracticable; and to extract the sense of such a mass of confused indefinite scrapings has been intolerably tedious.

The *management of the mulberry tree* by the Chinese; their application of *artificial heat;* and the use of *heat* at the time of *spinning*, are subjects deserving our particular consideration.

Further than this, we have no remark to offer, either in commendation or otherwise, of Chinese practices in making silk. Our readers must judge of their value. What may be entirely practicable under their system of labor, may be wholly incompatible with ours. There will be found suggestions, without doubt, which may be turned to good account by American silk producers. We commend the whole to an attentive reading.

[*To be continued in the next No.*]

ART. V.—THE SCIENCE OF HISTORY.

Introduction to the History of Philosophy, by Victor Cousin, Professor of Philosophy, of the Faculty of Literature of Paris. Translated from the French, by Henry Gotfried Linberg. Boston: Hilliard, Gray, Little & Wilkins. 1832.

[CONTINUED.]

For proof of this we have the authority of sacred writ superadded to the reasoning of profane philosophy. The following illustration, though drawn from a source the most familiar of all others in existence, the first and second chapters of Genesis, yet the reading it furnishes of these chapters is so little familiar to the generality of readers that we are tempted to give it in preference to any other illustration we can at this moment think of. We are also further induced to give it, in preference to any other we might select, because it may be the means of commending this philosophy to the credence of the "*faithful*" who will see no truth out of the Bible, and who condemn, first and last, as the invention of the devil, any and every philosophy for which some authority may not be found in its pages.

In the first chapter of Genesis we are told that "in the beginning God created the heavens and the earth." He then created "the grass, the herb yielding seed, and the fruit tree yielding fruit, whose seed is in itself, each after its *kind*." After this, "God made man in his own image; in the image of God created he him: *male and female created he them*." Here, now, the *kinds* only are created; and these kinds are created *in potentia*, in possibility, as it were; they exist as yet only in idea; are merely ideal; just as a painter might be supposed to create in his mind the outlines of a picture be-

fore it is transferred to, actualized upon the canvass. For in the second chapter of Genesis we are told that "these are the *generations* of the heavens and the earth where they were created;" that is, they were the same *genera*, the *kinds;* and these kinds existed "in the beginning" only in idea, for as yet "*they were without form and void;*" "*and God made every plant of the field before it was in the earth, and every herb of the field before it grew.*" And notwithstanding, in the first chapter, God had already "created man after his own image;" yet, in the second chapter, "*there was not a man to till the ground.*" "And the Lord God *formed* man of the dust of the ground, and breathed into his nostrils the *breath of life;* and *man became a living soul.*" And again, though in the first chapter, He had created man "male and *female;*" yet, in the second chapter, "the Lord God said, It is not good that man should be alone," so he made woman out of a rib which he took from the man, and brought her unto him.

The foregoing example gives us some notion of the metephysics of creation as taught by Moses, who was the greatest philosopher of his day, and who, it must be remembered, learnt his philosophy in the schools of Egypt which laid the foundation for the philosophies of all succeeding ages. The example just cited furnishes also a tolerably fair illustration of the doctrine of "idealism" or "spiritualism," of which we gave some account in our first article, by which we are to understand that all ideas are innate and self-existent in the human mind, and that they force themselves into *actual* existence by means of their own innate vigor and inherent activity—and this, as we understand it, constitute what Cousin calls the *impersonality* of reason, of which we shall learn more hereafter. Hence the reason why Tennemann, in treating of Universal History as a real system, and a true and entire philosophy, has concluded to regard only ideas; because ideas, being fewer in number, are easier classed and systematized than the multifarious acts of mankind; and because these multiform acts, after all, are but indexes by the way-side to point us to the ideas they represent; and because also the acts of mankind would be enigmas quite unitelligible to us but for the light afforded by the ideas which called them into being by which to interpret their meaning. Having once gotten to the bottom of things, and discovered the ideas which reside there as eternal, fixed, immutable, and irresistible causes, we shall then be able to explain the meaning of all the phenomena that are continually transpiring around us, and to reconcile all their apparent differences, conflicts and disorders. These, at a rough estimate, we take to be the reasons why Tennemann proposed such a plan in the treatment of Universal History, and why his suggestion was adopted by Cousin; though there is nothing in the work before us to indicate these to be the true and only reasons. If we are correct in this estimate, it will serve to explain the *modus operandi* of the whole Cartesian philosophy; for it must be remembered, that Descartes, who is the founder of modern philosophy, took his point of departure in *thought*, by an analysis of which he was alone able to account to himself for any thing, even for his own existence. The only alteration which Cousin makes in the plan of Tennemann is this:—he re-

gards not only *ideas*, but the *acts* of mankind as well, in the manner already described, and these he has consecrated under the remarkable appelatives of psychological and historical analysis. We are now prepared to accompany our author in the further development of his method.

Cousin, then, as we have seen, assigns to human nature five fundamental wants, that is, five general ideas which preside over its development, and which we have already enumerated in the order in which, according to him, they manifest themselves externally. These five constituent elements of human nature, he contends, are not fanciful ideas, they are not illusions, they are not immaginary wants arbitrarily assumed by certain speculative minds for the furtherance of certain favorite theories; philosophers have had no more to do with their creation, than mathematicians, astronomers, chemists, and geologists have had to do with creating or imagining the principles and laws of their respective sciences. On the contrary, they are *facts*, stern realities, eternal, indestructible, and irresistible elements which have been *discovered* to lie at the bottom of human nature, to reside in the human mind, and are there to govern and direct all its acts. Taken together, they form the soul of humanity. There are no more elements than those we have named, they exhaust the capacity of human nature; and there are no fewer; they can be neither increased nor diminished; they are simple, indecomposable, and irreducible into each other; it is not possible for human ingenuity or human intelligence to add one more element, or to extract one from those enumerated; once formed, they exist together without the power of destroying each other, and constitute the essence, the eternal foundation of humanity. It belongs to the essence of every thing which is strong to develope itself; and now, having found the constitutional elements of human nature, the next inquiry is:—How do these elements actualize themselves? In what *forms* are they manifested? If they are active, irresistible wants of human nature, they must neccssarily be supplied, they must force themselves to be represented. How then are they developed? What are the visible, sensible, *material* representatives of these ideas? That is, what are their products, what are *their acts*, what have they created? Cousin again enumerates these categorically, as follows:

The idea of the *useful* gave birth to industry, to commerce, the mathematical and physical sciences; the idea of the *just* produced the state, government, jurisprudence; the idea of the *beautiful* created art; the idea of the *holy* and *divine* is represented by religion, the ritual of worship, the church; and lastly, the idea of the *true* minifests itself in philosophy, which accounts for, explains and verifies all the others. "Add all these together, multiply ages, fertilize these feeble germs by the accumulated labors of generations, and the result will be all which at this moment exists." The development, progress, and growth of all these elements, of all these wants of our common nature, with all their combinations, modifications and natural relations, constitute history, which is the visible image of the human mind.

"In universal life," says Cousin, "nothing perishes; every thing

is metamorphosed and appears anew; mechanics and physics reappear in chemistry, and chemistry in vegitable physiology, which again finds a place in the economy of animal nature. All these antecedents, all these degrees of life, are also in humanity." According to his doctrine, humanity is the resume, of all external nature, with consciousness, that is, with a knowledge of all these things and of itself superadded. There is nothing in the whole external world but what re-appears in man, (subject of course to different conditions) in the same manner as the whole world and the universe reflects God. The interior movement of the energies of the world, in the necessary progress of their development, from degree to degree, from kingdom to kingdom, produces that wondrous being whose fundamental attribute is consciousness; and in this consciousness are to be found precisely the same elements which, under certain modifications, are also to be found in nature, and which reside also in God himself. In order that there may be no mistake on this point, M. Cousin is very copious and explicit in relation to it throughout the whole course of his lectures. He does not consider humanity as the effect, of which nature is the cause. Nature did not produce humanity; and yet there is nothing in nature but what re-appears in humanity. Humanity is a separate and independent creation; but it was created after the same universal type and eternal model. Nature is the basis of humanity. Nature is the column, of which humanity is the capital, the crowning apex; and between nature and man there evidently exists a harmonious relation of general characters and general laws.

Proceeding thus by the rule of induction, which rests upon the supposition that the laws of nature are constant to themselves, he advances, as we have seen, from nature to humanity. As there is nothing in nature but what reappears in humanity, so also there is nothing in humanity but what reappears in history; for the induction which he makes from humanity to history, rests upon one only supposition, viz: that of the constancy of the laws of humanity. "If human nature is constant to itself, then that which occurs in its psychological development, will also occur in its historical development;—the one is the measure of the other." History, then, is the development of all the essential elements of humanity; that is, the development of these elements are the acts, the deeds of humanity, and of these, history takes cognizance. But these acts, these deeds of humanity, are but the realizations, the symbols, the visible images and outward forms of the *ideas* which reside in human intelligence; hence, whatever enters into human history necessarily pre-exists in the human intelligence. But all the essential elements of humanity, all the ideas of the human intelligence, subject to different conditions, pre-exist also in nature; and their development from out of both, that is, in the acts and deeds of both, are governed by precisely the same laws, modified according to their different conditions; hence all the facts of human history must necessarily be capable of a scientific arrangement, analogous to our knowledge of the laws of nature in general. But this is not the only inference deducible from M. Cousin's premises; and fortunate would it be for the cause of

science and philosophy, if the other, which we are about to mention, were equally innocent and legitimate.

If "the universe is nothing but God expressed," and "man is the universe in miniature," that is, if "all the momenta of the divine essence pass into the world, and return into the consciousness of man," then history, which is the visible image of that consciousness, is the last counter-stroke of the Divine Action. As humanity is the resume of the universe, which is a reflection of God; and as the laws of nature and the laws of humanity are analogous, that is, their elements, which are the same with different conditions only, are developed under the government of laws exactly analogous; and as there is nothing in nature and humanity but what pre-exists in God, and is reproduced alternately in them both; then it follows that, in the last analysis, the history of humanity is also the history of nature, and also the history of God himself.

It is by this process of reasoning that M. Cousin aims to penetrate into the divine essence, and to arrive at a complete knowledge of God. He repudiates utterly the common and vulgar opinion of God's incomprehensibility. There are those, he says, who would have him incomprehensible. There are men, reasonable beings, whose vocation it is to comprehend, and who believe in the existence of God, but who will believe in it only under the express condition that this existence is incomprehensible. As for him, however, he believes, so little is God incomprehensible, that his nature is constituted by *ideas*—by those ideas, whose nature it is to be intelligible—that God, the substance of ideas, is essentially intelligent, and essentially intelligible. In order to arrive at this sublime species of knowledge, we have but to inquire and find out what are the elements of human reason, that is, the ideas which preside over the development of human reason. That which we discover to be true in reason, humanly considered, subsists in reason in itself, reason *per se*; that which forms the foundation of our reason, forms the foundation of eternal reason, and this eternal reason is God. "O, Reason, Reason," exclaims Fenelon, "art not thou He whom I seek?" Now, ideas are not the reflection of things, but things are the reflection of ideas. So far, indeed, are ideas from being representative, that they alone are constituent, and all the visible works of creation are but reflections, representatives, symbols of ideas; hence, as we have already stated, whatever appears in human history, must appear there as the representatives, the actualizations, the material forms of the ideas which constitute human reason. And as human reason is but a reflex of the Divine reason, hence, whenever, by the joint aid of history and philosophy, we shall have arrived at a knowledge of the one, we will at the same time have attained to the knowledge of the other also. Such is the sum and substance of M. Cousin's demonstration on this difficult subject; and however mathematical and conclusive this solution of the problem may seem to himself and to others, on our part we deem it wholly unphilosophical and insufficient, and as such must beg leave to enter here our protest, in the words and figures following, to wit:

Some distinction must be made between God and Providence.

The providence of God alone interests us, and is intelligible to us, and comes within the scope of our comprehension; that is, the providence of God so far as concerns nature and human beings. God, considered in his perpetual action on the world and on humanity, is Providence. It is only in this capacity, only as Providence, we can know God. We can know him only as he is manifested in us and around us, and only so far as we know ourselves and the operations of surrounding nature, can we know him; whatever other ulterior elements he may possess, are beyond our reach and comprehension, because we have nothing else by which to reach and to comprehend him. We ascend to God upon the ladder, as it were, formed of the component elements of human thought; when we have exhausted that, when we have reached the last round of this ladder, we have then reached the Ultima Thule of our capacity to mount higher, and God still recedes from our vision far into his own impenetrable infinity, and there mocks at that arrogant philosophy which vainly attempts to grasp and to analyse him. But that knowledge which is within our reach should suffice, and must necessarily suffice, for man; we have no need to know more of God than in so far as he is connected with us and with the world we inhabit; when we shall have known all this, when we shall have known all that our capacity allows us to know, we shall have achieved much. If there shall be found in human nature a *positive want* to go beyond this knowledge, and to penetrate into the infinity of God, and to know him in all his transcendent glory, then it will not only be legitimate, it will not only be possible, for man to achieve this knowledge, but he will achieve it; for the want, like all the other positive wants of human nature, will be sufficient for itself, will suffice for its own accomplishment. But we apprehend that, upon close inspection, no such want will be found to exist there. The whole life of humanity is not more than sufficient to exhaust the knowledge of itself; and until that knowledge is exhausted, it will be the whole business of its life to know itself, and this knowledge must necessarily limit its knowledge of God; for so long as any thing of itself remains to be known, it cannot quit the pursuit of that to seek something beyond, for that would be to abandon the means.

The appellations of pantheism and fatality have not unfrequently been bestowed upon M. Cousin's system of philosophy. With some show of resentment, however, he affects to deny the soft impeachment, and throws back, in turn, that amiable accusation upon those who advance it, contending that the true God is on his side. Who or what he understands this true God to be, will more fully reveal itself as we progress further into the heart of his system. The reader cannot fail to observe that our author is extremely solicitous not to shock the prejudices of any one, but rather to conciliate all parties, and to reconcile all differences of opinion, by effecting a general fusion of them all in an amicable association in the capacious bosom of his all-embracing philosophy. For this purpose he is obliged more frequently than comports with ease or dignity, to "define his position," an attitude which, for individual comfort or for prospects of success, is pretty well understood in this country.

When a politician or a philosopher begins to dodge in that way, his enemies are very apt to keep him at it until he is ultimately brought into discredit on all hands. Our author exhibits, also, no little degree of prudery throughout these lectures. It is plain he loves the treason, while he winces at the consequences which attach to the name of traitor. The name, the odor, but not the thing itself, affrights him. He labors hard to preserve an *entente cordial* with popular religion and the church, at the same time that he proposes his philosophy as a substitute for both. Although he professes to be no pantheist, and, indeed, time and again protests most strenuously against the doctrines of pantheism, yet it cannot be denied that, in common with most of his brethren of the continental school of philosophy, his metaphysical demonstrations attract him continually in that direction in spite of himself. A single impatient remark betrays his predicament and his want of success in extricating himself therefrom—"pantheism," he says, "is at this day the bug-bear of feeble imaginations." He makes no provision for, nor does he attempt any demonstration of, the special intervention of God in human affairs—nay, he will on no account allow of his interference in any manner save through the agency of general laws. We will now see what pantheism is, and how far from this modern Charybdis of philosophy M. Cousin steers his bark.

Pantheism is simply, the entire absorption of God in the universe, and the reabsorption of the universe in God, which makes God and the universe identical. Or, to be more explicit, pantheism declares that there is but one being—that this One Being is self-existent and necessary—that all the different individual creations throughout the universe are nothing but different modes of his existence—that men, all things animate and inanimate, which make up the sum of creation, are only various modes and different manifestations of this one being—nay, what do we say!—they are not, properly speaking, different modes of his existence, but all these things in their totality and unity constitute God—that the whole universe considered in its vast, immeasurable and infinite entirety and unity, is the ever living, self-existent God, and the different individual creations which we observe as apparently distinct, independent, and isolated, are but the different ways and means by which his existence manifests itself—that all causality is, therefore, in him—therefore no causality exists in his creatures—and where there is no causality, of course there is no free will—and where there is no free will, there is no law of obligation, and of course no responsibility. It results then, as a necessary consequence of every pantheistic system, that there is in man no such thing as free-will; and all those who deny free-will to man, do virtually assert in some shape or other the doctrine of pantheism. The peculiar system of pantheism, into which Cousin's theory would seem to resolve itself, goes even further yet—it appears to deny free-will, not only to man but to God as well. It asserts the *absolute necessity* of creation from the absolute causality of God. "God, if he is a cause, can create; and if he is an *absolute* cause, he *cannot but create*." An absolute created force, which cannot but pass into act, being eminently his characteristic, it follows, not that creation is possible, but

that it is necessary and unavoidable." God creates therfore from necessity, and because he cannot help but create—he creates from the inward necessity of his nature to do so. He is cause, absolute cause, and that which constitutes him a cause constitutes him a creator, for to cause is to create. He is therefore not free to choose whether he will create or not. If he were free to do so, and were to choose not to create, he would thereby dethrone himself, abdicate his power; nay, he would uncreate himself, inasmuch as he lives only by creating—there would hence be no God, because no universe no creation; for the mind cannot conceive of God without a world; a God without a world must be regarded by man, as if he were not; he would thus be a "*Roi Faineant*," a king Do-Nothing. "God is in the universe, as the cause is in the effect;" he enters into his creations with all his characteristics and attributes; and the creatures partake of all the characteristics and attributes of the creator; therefore the universe is but a reflection of God.

This can by no means be the true state of the case; and yet that such an inference is legitimately deducible from Cousin's system of philosophy, we think the reader will agree with us in the end, abundant evidence can be furnished from the pages of the work that stands at the head of this article. It is Spinoza, more than any other philosopher, whose genius has given to pantheism in modern times its highest form and most perfect development. He demonstrated the different propositions upon which he relies to establish his system of "*pure*" pantheism, with the most exact method, according to geometrical principles; and with manly boldness and a calm indifference he follows whithersoever his demonstrations lead, without any of that timid, mawkish and deprecatory spirit, which so often makes our author shrink from extreme consequences, and causes him to modify conclusions and endeavor to conciliate popular prejudices at the risk of consistency. It is the taint of pantheism in his doctrines which, in our opinion, more than any thing else, vitiates our authors whole system of philosophy; and now in order to ascertain clearly whether he be justly amenable to this charge, it will be necessary to state the pantheistic system established by Spinoza, and employed as test by which to judge M. Cousin's eclecticism. The narrow limits to which we are confined forbid us to give even an outline of the demonstrative processes by which Spinoza rears his stately fabric; all we can do is simply to announce the results at which his demonstrations arrive; and it will be enough for our purpose if we can do this in a manner sufficiently clear to enable the reader to comprehend it.

Jouffroy, one of the ablest of Cousin's disciples, has given a more luminous exposition of the grand and obscure doctrines of the system, as unfolded by Spinoza, than any of the expounders of that philosopher with whom we are acquainted. Such indeed is the obscurity of Spinoza's doctrines, as Jouffroy justly remarks, that very few students are able to comprehend them, though all speak of them. The difficulty of understanding his writings arises mainly from the geometrical method employed, which in this case, as in all cases where the attempt is made to apply mathematical forms of reasoning to subjects for which they are unsuited, serves only to render the

exposition complicated and obscure. Should the reader desire to know something more of the method by which Spinoza demonstrates his system of pantheism, we beg leave to refer him to a work of Jouffroy, lately translated into English by William H. Channing, entitled "Introduction to Ethics." And we also beg leave at the same time to acknowledge our own indebtedness to the Frenchman for what little we know of the philosophy of the renowned glass-cutter of Amsterdam.

Spinoza first proves the *unity* of God, or the unity of substance; that is, that there is but *one* being, whose essence is existence. The unity of substance being proved, he demonstrates successively that it is *necessary* and *infinite*. Unity, necessity, and infinity, of substance being demonstrated, he proves yet further that Being, or substance, is *eternal; independent;* and finally, that it is *simple* and *indevisible*, Such a Being according to Spinoza, is God, in the only sense we can concieve of him; and this idea is the fundamental one of his system. "God being the only substance, and comprehending in himself all existence, it follows that nothing exists except through him and in him; or, in other words, that he is the inherent cause of all, or rather the substance of all which has being. There is not, and cannot be, then more than one being, which is God, and the universe is only an infinitely varied manifestation of the infinite attributes of this being." Spinoza next inquires as to the manner in which this necessary being, whose essence is existence, develops himself; and proves that, being himself necessary, he can only act through and by the necessary laws of his nature, and consequently, that he cannot be *free* in the sense in which we understand that word. He ridicules the idea which we form of God, as of a being, who acts for a certain end, and because he *wills* to accomplish that end, but who could yet prefer another, and, consequently, act in another way. He affirms that it inevitably follows from the necessary nature of such a being as he has depicted, that all the acts and ideas, which are successively developed in him, arise *necessarily;* so that nothing which originates from him is produced by *free choice*, and the word *will*, therefore, in its common acceptation, cannot be attributed to him. "It follows, from this view, that in God there can be neither moral good nor evil. For moral good and evil imply a choice between different courses of conduct; and, since God acts through the necessary laws of his nature, he cannot but do what he actually does; cannot, consequently, act with a view to a certain end, nor with a purpose to accomplish it." "God *wills* not; acts not from design; has no desire, passion, nor disposition." "If God's nature is developed thus necessarily, and if nothing exists which does not spring from him, it follows that nothing which is accidental can exist or occur;" but that in the words of Pope, whatever is, is right, and all's for the best; in short, that there is no such thing as accident. We call that *contingent* and *accidental*, says Spinoza, of which we cannot comprehend the *necessity;* but all which does happen, must happen and happen too exactly in that way. From the same principles also, it appears the world is eternal, and that the idea of creation is chimerical; for that which at any time did not exist, could never have begun to exist, and there can be nothing beside the being who is one and infinite.

Such is a concise outline of some of the fundamental principles of the pantheistic fabric erected by Spinoza. When viewed in all its completeness and integrity, it constitutes the most vast, the most absolute, and the most rigorous system of pantheism, which the hand of philosophy has ever reared. We have brought into light, however, only so much of its principles as will serve to test the doctrines of Cousin's system of philosophy. It cannot but be observed that there is a very striking family likeness between some portions of Cousin's doctrines already set forth, and those of Spinoza as sketched above. It is believed that this resemblance will be still more apparent as we advance, and as some of the more lurking and subtle of his principles are disengaged and brought into full view, and their legitimate inferences detached. When we once abandon that long cherished and well understood popular belief, or vulgar prejudice, or ignorant superstition, or by whatever other epithet it may be denounced, which asserts the personality of God, there seems to us to be no resting place for the mind out of the lap of pantheism: pantheism, in some shape or other, is the only substitute for the personality of God, as expounded in the Bible. It is a specific character of pantheism, that it always leads, by a strict necessity, to the denial of human liberty, and consequently to the belief that a law of obligation is impossible. In the view we have given of it, it denies divine as well as human liberty.

God undoubtedly enters into the universe through the intervention of those fixed and necessary laws which govern all its developments, and is therefore continually present in all the works of nature and in all the wants of history, in the shape of those instinctive wants which are continually manifesting themselves in acts, in external forms, and visible images. But he does not expend his whole essence, he does not exhaust all his powers in his creations; the interior principle of causation, while developing itself in acts, retains that which constitutes it a principle and a cause, and so far from being absorbed in its effects, is not in the slightest degree diminished or changed thereby. Nor does he limit his action upon humanity, by itself, in its instinctive operations. This would be to declare, with Vico, that humanity is divine, a deity, and its own creator—that it suffices for itself, is its own work, its own creation. The infinity of freedom is an attribute of God; to say that he acts upon the universe only through its fundamental, permanent, and necessary laws, would be to limit his freedom of action, and to make him a finite being; that is, to restrain his action by the laws or nature of the creature. While God unquestionably intervenes in human affairs in a general way, that is, through the necessary and invariable laws of nature and of humanity, he is at the same time a free, sovereign power, distinct from humanity and from the universe, above all, controlling all, arresting, changing, modifying his own acts, graciously supplying humanity from time to time with new strength and materials to work with, and giving its action a new direction, or an additional force, as may be required for the greatest good of the race. He intervenes, therefore, specially as well as generally. This proposition, to our mind at least, requires no other demonstration than the simple acknowledgment of the infinity of

God's freedom. It is necessary that the laws of nature should be fixed and determinate, otherwise it would be impossible for men to foresee the recurrence of any of those natural phenomena which so much affect his interests and well-being. But we can see in this idea of a special providence, nothing that conflicts with any sound philosophical notion that may be entertained with regard to the character of order, such as its permanence, regularity, and necessity, or with the regular development and uninterrupted progress of a preconceived and prearranged plan; a plan which, in embryo, like an acorn, has within itself the germ and capacity of perfecting itself. The doctrine that "a Paul may plant and an Apollos may water, but God alone can give the increase," is sound philosophy. Nor does the idea of a special providence conflict with the idea of God's *general providence*, (which, indeed, is but another and more definite mode of stating the preceding proposition,) because God is himself the source of order, of infinite and eternal order; and whether he act generally or specially, he acts always in obedience to the divine principle of order which is in him; hence his special acts cannot contradict his general laws, but, besides being in correspondence with them, must aid and assist them.

But in fact we deem the almost interminable discussion that has been maintained on this subject, as having been more fruitful of strife than of any useful result; for it is immensely difficult, if indeed not impossible, to draw a well defined line of demarcation between the divine action and the human, and to say with accuracy and certainty when and where God intervenes in human affairs *specially*, that is, as an independent power out of humanity, and without reference to those inherent and necessary laws which reside in universal nature, and therefore *apparently* containing them; or *generally*, that is, by humanity itself, in its instinctive operations, and by means of natural laws. Much, therefore, that has been confidently asserted in the respect of certain men and certain nations, or of certain transactions, that enjoy the exclusive honor of being denominated "*providential*," and to have been produced by an arbitrary or an independent exercise of God's creative power, without reference to, if not in contravention of, those universal natural laws, which otherwise might have been deemed competent to their production—much, we say, of this sort of declamation may, after all, admit of more or less qualification; and we apprehend, if closely looked into, a great deal of their sublime specialities would fade into mere common place generalities, and they would be found to have been *legitimate effects from natural causes*, and to have sprung from the same general and universal laws which rule over the birth of other more ordinary men, nations, and events.

In our next article, we will introduce to the reader another of the great, leading, fundamental principles of our author, to wit: the reduction of the elements of human thought, in imitation of the famous categories of Aristotle and Kant. These elements, which, according to Aristotle, were very numerous, and which were even multiplied by Kant, are reduced by Cousin to a very simple formula, composed of three parts, which constitute a kind of trinity, of which

he makes immense use, and by means of which he undertakes to explain all the past events of history, and even in some degree to anticipate or foretell the future history of mankind. After this principle shall have been fairly stated, nothing more will remain for us to do but to bring together the different principles enumerated in these articles, and to draw thence such deductions as may be legitimately extracted from them. As in physics, a speculative mistake is abandoned when contradicted by facts which strike the senses; or as in mathematics, an absurd or inconsistent conclusion is admitted as a demonstrative proof of a faulty hypothesis; so in metaphysics, those principles must be pronounced to be unsound which will justify deductions and inferences which the common sense, the common observation, and the common experience of mankind declare at once to be absurd and inconsistent. It is by this test that M. Cousin's philosophy must stand or fall; and this is the test which we mean to apply in the sequel.

(To be continued.)

ART. VI.—SOLEIL'S SACCHAROMETER.

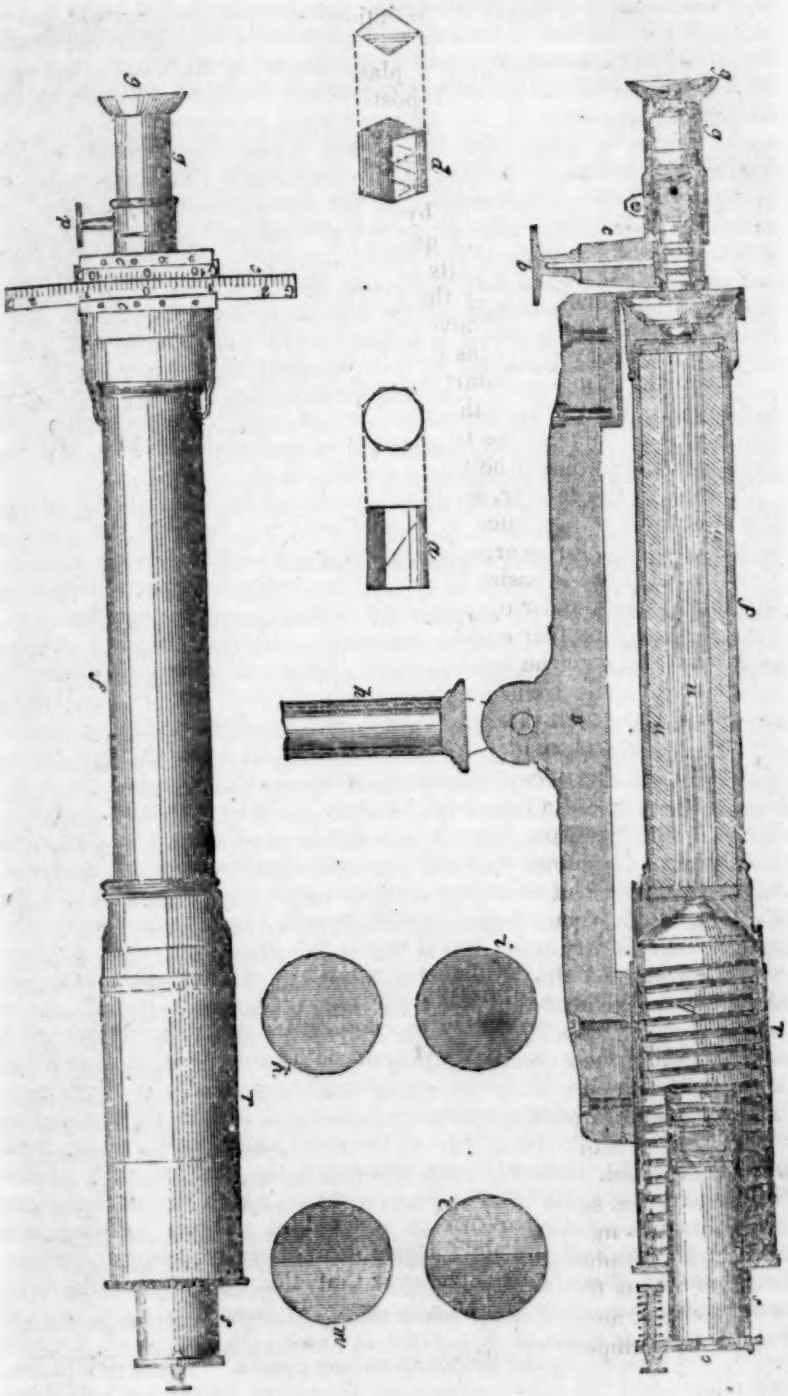
A beautiful instrument for ascertaining the quantity of crystalisable sugar in any saccharine solution, was invented in Paris, in the year 1846, by M. Soleil, an eminent optician and mathematical instrument maker. It is now used by numerous refiners in France, who employ it to ascertain the value of the raw sugar offered to them for sale, and is of such unfailing accuracy and easy use that it will soon be as well known to the manufacturer as the ordinary pesè-sirop of Beaumé. But although this instrument be one requiring only a moderate degree of intelligence and a few hours study to make its practical application familiar, the principles on which it is constructed are not so easily apprehended, and require a somewhat more than superficial acquaintance with the discoveries in optics made by modern science. It is the object of this paper to give a description of the instrument, of the manner of using it, and if possible an explanation of the principles on which it is constructed, that will be intelligible to the general reader.

There is an extraordinary property of a ray of light discovered by M. Malus in 1808 which is termed polarisation. Light is said to be polarised when, by being once reflected or refracted, it is rendered incapable of being again reflected or refracted at certain angles. We all know that in general a ray of light after being reflected from any surface, as for instance, a pane of plate-glass, may be reflected a second time from another surface, and will also pass freely through transparent bodies. But if the ray of light be reflected from a pane of plate-glass at an angle of 57° it cannot be reflected from the surface of another pane of glass in certain positions, although it will be completely reflected by the second pane in other positions. A ray thus reflected at an angle of 57° also loses the property of passing through transparent bodies in certain positions, although it will freely

penetrate the same bodies in others. Such rays of light are said to be polarised.

It has also been discovered that the greater number of animal and vegetable substances, such as gums, jellies, resins, &c., possess the property of doubling the image or appearance of an object when seen through them in certain directions, because the ray of light falling upon them is refracted into two pencils, more or less separated, according to the nature of the body and the direction of the incident ray. Each of these pencils is polarised. *Iceland spac* possesses this property of double refraction in an eminent degree, as may be seen by pasting a piece of paper with a hole in it on the side of the spac farthest from the eye; the hole will appear double in looking through the spac. It has further been observed that when a ray of light is thus divided into two polarised rays it exhibits properties which are symmetrical both to the right and left of the plane of reflection, but that in crystallised *quartz*, this symmetry is destroyed, and that the plane of the polarisation deviates either to the right or left of the observer, by an angle proportional to the thickness of the plate of quartz. This is called circular polarisation. Mr. Biot discovered that a solution of *cane sugar*, as well as many other liquids, possessed the same properties of circular polarisation as crystallised quartz—but the quartz possesses this remarkable quality, that in some crystals the rotation is from right to left, and in others from left to right, and if two of these opposing crystals of equal thickness be interposed between the ray of light and the observer, they counteract mutually their opposing influences, and the circular polarisation ceases to exist. The law of circular polarisation in liquids such as solutions of cane sugar was shown by Mr. Biot to be, that the angle of deviation is proportioned to the length of the column of liquid, the density of the liquid, and the proportion of active matter. It was by the application of the optical principles above stated in a very succinct form, that Mr. Biot constructed an instrument which showed the quantity of crystallisable sugar in a syrup with the same accuracy as the thermometer indicates temperature, or the barometer atmospheric pressure; but the instrument of his invention, although available for the analysis of the chemist, required for its use an apartment specially prepared for the purpose by excluding all light except the ray that fell on the instrument, and the results could only be obtained by mathematical calculations, not always understood by the manufacturer who might desire to employ it. M. Soleil has succeeded in inventing a different instrument, which although depending on the same principles, may be used at all times and in all situations, without any necessity for calculation, and which can be practically applied by persons ignorant of the theory by which he was guided, in the same manner as the thermometer and barometer are daily used by persons unacquainted with the physical laws which influence the rise or fall of the mercury in their columns.

The annexed plate shows the Saccharometer. Letter *d* is the prism of *Iceland spac*, possessing the power of double refraction as above stated, which polarises the light transmitted through the instrument in the direction of its axis. This prism is termed the polariser.



A second prism also doubly refracting, placed at the point *a*, also seen separately at letter *a*, and called the analyser, causes two images of the opening *o* to be seen: this can be turned at will in its socket and in any desired direction, and then fixed in its position by the screw *p*.

At the point *e* is a plate of crystallised quartz composed of two pieces possessing opposing powers of circular polarisation, and of equal thickness. On looking through the instrument the effect of the preceding arrangement of the prisms and quartz is such as to show two colored disks, (see letters *i k*) one violet and the other yellow, each separated by a vertical line, which is the line of separation of the two kinds of quartz. Each of these disks presents the same shade of color on its entire surface, when the analyser is placed at zero, as shown by the scale seen in the figure of the instrument.

The slightest movement of the analyser makes a perceptible change in the tints, and as this movement acts in contrary directions on the two plates of quartz, the succession of colors is inverse, and the slightest change thus produces a double effect.

Now if in the tube *n*, syrup is introduced in front of the quartz, the effect will be the same as is produced by changing the position of the analyser, for as cane sugar possesses a right circular polarisation, its influence is added to that of the crystal of quartz possessing the same power, and their combined influence overpowers that of the crystal possessing the opposite property. If the syrup is a solution of *glucose*, or uncrystallisable sugar, whose circular polarisation is left, a similar effect will be produced in favor of the left polarising quartz. The result in either case is that the disks no longer possess the same general shade of color, but that in each the two halves separated by the vertical lines possess distinct colors. In order therefore to measure the rotary power of the column of syrup, it would be necessary to place before it a plate of quartz having a left rotation of a thickness requisite to neutralise the effect of the sugar, and thus would be produced a *couple* or *pair* of forces, of which the active elements, sugar and quartz, would exactly compensate the influence of each other. But it would be difficult and even impossible to procure a series of plates of quartz of different thickness and sufficiently numerous to enable the observer always to find one of the exact thickness necessary to compensate the rotary power of a saccharine solution at all degrees of saturation; and it is to avoid this necessity that M. Soleil invented that part of the instrument which he calls the compensator. It is fixed at the point *c*, and is composed of two oblong prisms of the same angle cut out of the same plate of quartz: these prisms super-posed the base of each on the summit of the other, recompose a plate of which the surfaces are parallel. Each of these prisms is fixed in a frame running in a groove, so that they can slide before each other by means of a screw which moves both in such manner that the thickness of the compound plate can be varied at pleasure. In front of this compound plate is fixed another of the same thickness but made of a single piece, and possessing the contrary rotary power. These two plates, one simple and the other compound, therefore create no polarising

effect, their reciprocal influences being mutually compensated, and in this position the compensator marks zero. Now if the screw that moves the compound plate be turned so as to make the two thinnest ends cover each other, its thickness being diminished the power of the simple plate becomes predominant, but by an inverse motion of the screw the compound plate becomes the thickest and overcomes the influence of the simple plate. On the frame of one of these plates is engraved a scale beginning at zero in the middle and divided into degrees to the right and left for indicating the two deviations of polarised rays; and on the other is engraved a scale called a vernier for indicating tenths of the first scale. The first of these two scales indicates tens, and the second units, the two combined showing the exact number of degrees marked by the instrument when an observation has been made. At the point *g* is a lens fixed to the analyser, and of which the focal distance may be lengthened or shortened at pleasure to suit the eye of any observer.

Before using the instrument the observer should first satisfy himself that it is in perfeet order, for which purpose he proceeds as follows. He turns the screw of the compensator until the zero of the two scales coincide perfectly. He then places a tube of water in the instrument and looks into it, lengthening or shortening the focal distance of the lens *g* until he can see plainly and distinctly the black vertical line that divides the two disks that are presented to his view. Finally he turns round the analyser in its socket until these disks present on their entire surface a uniform color: as soon as this point is attained, he screws the analyser tight enough to fix it in its position.

The apparatus being now ready for use, the water is poured out of the tube and the syrup which is to be examined replaces it. So soon as this column of syrup is interposed between the compensator and the polariser, the appearance of the disks is changed. The right half of each disk presents a different color from the left half, because the rotary power of the sugar has caused the pencil of polarised light to deviate to the right, if the sugar is crystallisable or to the left, if it be glucose or uncrystallisable sugar. All that the observer has to do, is then to turn the screw of the compensator until it shall restore the identity of tint throughout the disk—the number of degrees maked on the scale at once shows the extent of the rotary power of the sugar, each degree on the scale corresponding to a thickness of one millimeter* in the compound plate of quartz that forms the compensator. So that if the scale marks 60°, the rotary power of the saccharine solution is equivalent to that of a plate of quartz of sixty millimeters in thickness.

The use of the instrument itself then consists simply in placing syrup in a tube and turning a screw until the image seen on looking through it, is of an uniform color. Nothing can be more simple than this, but it is also necessary to ascertain what quantity of crystallizable sugar is equivalent to the rotary power of the quartz as shown by the scale, so as to enable the observer at all times, and without

* The millimeter is 0.03937 inch.

the aid of calculation, to say precisely what quantity of sugar is really contained in the solution submitted to test.

To ascertain this point, a series of remarks and experiments were conducted with great pains and care by M. Cluget and communicated by him to the society for the encouragement of national manufactures at Paris, in its session of the 14th of October, 1846, which I shall endeavor to condense within as limited a space as is compatible with the desire to render the subject perfectly intelligible.

This chemist commences by observing that although in theory the polarisation of light constitutes one of the deepest and most abstract branches of the science of optics, the appreciation of its effects considered exclusively in its practical application Soleil's Saccharometer is nevertheless of the greatest simplicity, and he then proceeds to describe the mode of manifestation for the different species of sugar.

Let us commence by supposing that we desire to ascertain the quantity of crystallisable sugar contained in a substance which we know beforehand to contain no other species of sugar, such as cane juice when not injured by frost, heat, fermentation or other similar causes. The juice is put into a matrass (or white glass bottle with a long neck,) which is filled up to a mark indicating a capacity of 100 cubic centimeters, and to this juice is added ten cubic centimeters of subacetate of lead which fills the matrass up to a line marked 110 c. c. The liquid is then slightly shaken and under the influence of the subacetate of lead is completely defecated in two or three minutes: it is passed through a paper filter and poured into a tube twenty-two centimeters in length; this tube is placed in the instrument and an observation taken in the manner above mentioned, which will show the number of degrees of deviation effected on the polarised light in its passage through the instrument. This number of degrees multiplied by 16.471 and divided by 10, gives the weight in grammes and centigrammes* of sugar contained in a litre† of the liquid.

There are tables however which accompany the instrument and dispense with the necessity of calculation, so that by merely looking at the table we find marked opposite the number of degrees of deviation, the proportion of sugar in the liquid.

The reason for multiplying by the number 16.471 is this. Experiment shows this to be the quantity in grammes and milligrammes of sugar perfectly pure and dry, a pure sugar candy of which a solution carried to a volume of 100 cubic centimeters will determine a right deviation of 100° in the saccharometer when observed through a tube of 20 centimeters in length. Now as the action of saccharine solutions or polarised light is always in proportion to the quantity of sugar contained in them, or in other words the number of active particles of sugar interposed between the ray and the eye, it is evident that the number of degrees of deviation multiplied by this number 16.471 and divided by 10 will give the quantity of sugar per litre in the liquid subjected to examination, the litre being equal to a

* The gramme is 15.438 grains troy. † The litre is 1.760773 pint.

cubic decimeter. The table used in the above example is 22 centimeters, one-tenth being added to its length, to compensate for the additional dilution of the liquid resulting from adding to it one-tenth of its volume in subacetate of lead for defecation.

If subacetate of lead cannot be readily procured the defecation can be as easily and efficiently operated by adding 5 cubic centimeters of a solution of isinglass and an equal quantity of alcohol.

If instead of a liquid we desire to test a raw sugar or molasses, the process is somewhat different, because of the coloring matter which would prevent the ray of light from passing through it when in solution, with sufficient distinctness to enable the observer to obtain a clear view of the effect produced. The result is however more directly obtained, because as in this case the observation is to be made by comparing the effect which determined weights of these substances exercise on polarised light as compared with that created by equal weights of pure sugar. The number of degrees marked on the scale when the observation is made indicates the exact per centage of crystallisable sugar in the substance examined, without further calculation or reference to tables.

The most convenient mode of preparing, defecating and discoloring brown sugars or molasses so as to render them suitable for observation in the saccharometer is as follows:

A quantity sufficient to occupy a volume of 200 or 300 cubic centimeters is procured, and is placed in a matrass, guaged so as to contain exactly one, two or three hundred centimeters. The necessary quantity of sugar or molasses according to the capacity of the matrass, is then introduced into it and is dissolved by a quantity of water which is poured into the matrass until it reaches exactly the mark of the guage, if the sugar is white and clear enough to be observed without defecation: if not, a space of about 20 centimeters must be left and filled up with the defecating agent, whether that agent be subacetate of lead or the mixture of isinglass and alcohol. The whole is then shaken up and thrown on a filter. If the liquid when filtered is still too darkly colored to admit of an observation it must be discolored by passing it through bone black. The discolored syrup is then placed in the tube and the instrument, being used in the manner above described, the exact quantity of crystallisable sugar is ascertained.

The method above indicated is all that is required for ascertaining the quantity of crystallisable sugar in the raw material obtained from the *cane*. But it frequently happens that it is desirable to ascertain the quantity really existing in saccharine solutions containing left polarising sugar or foreign substances also possessing polarising power, and I shall now proceed to detail the process employed by M. Clurget for analysing such solutions, although this is rather a matter of curious inquiry than of practical utility for sugar refiners in this country. In order to disengage from the total amount of deviation that which is attributable to the crystallisable sugar alone, it is necessary to convert by an acid the whole mass of sugar into left polarising sugar. In this operation the temperature must be carefully noted, for it exercises a powerful influence on saccharine solu-

tions possessing left polarising power. The laws which govern this influence have been determined by M. Cluget, although the fact of its existence was first pointed out by M. Mitscherlich, of Berlin. A table showing the amount of this influence for each degree of the ordinary temperature of the atmosphere accompanies the instrument.

In order to render facile and exact the observations, a special tube for acidulated solutions is furnished: this tube is provided with a verticle tubulare in which is plunged a thermometer whose bulb penetrates into the solution. The liquid is poured into a matrass marked so as to designate capacities of 50 and 55 cubic centimeters. The vessel is filled up to the first mark with the liquid, and is then filled up to the second mark with pure and concentrated hydrochloric acid. The whole is shaken, a thermometer is placed in it, and the matrass thus arranged, is heated in a hot-water bath to 68° c. and then plunged into cold water to bring it back to the ambient temperature. The liquid is then filtered in order to disengage any chloride of lead produced by the action on the hydrochloric acid of any excess of the sub-acetate of lead employed in the defecation. The solution is then observed in the saccharometer and its left deviation is noted: to this number must be added one-tenth to compensate for the dilution occasioned by the addition of the acid; the total is added to the number of degrees of right polarisation ascertained prior to the acidulation, and by looking at the table in the column of temperature at which the observation is made for the number which approaches the nearest the sum total of the above additions then will be found indicated in the last column to the right, the number of grammes of sugar contained in a litre of the solution.

In conclusion, I will state that if any of your readers should desire to inspect the instrument personally, it will give me pleasure to afford them an opportunity of so doing, and to explain by showing it in actual operation, whatever may be found to be imperfectly described in the hasty sketch above given.

We take from the "Scientific American" the following remarks upon the Turpentine business in North Carolina and Georgia:

In making turpentine a medium sized pine tree, with large top, furnishes the turpentine best. In North Carolina, however, trees of only eight or nine inches diameter are often selected. The tree is tapped for its sap in the months of December, January and February. The first turpentine which flows is called *virgin* turpentine, and care is taken to preserve the pure white color which is natural to it—rosin made from the virgin turpentine is transparent. The sap is distilled like malt and the result is turpentine and rosin and tar. More turpentine is now made in North Carolina and Georgia than in all the rest of the world put together, and the distilation is conducted in the forest, saving all unnecessary transportation of refuse material. Twenty years ago, there was more spirits of turpentine distilled in Europe than in the United States, but the tide has now turned and Europe gets turpentine from America.

AGRICULTURE AND MANUFACTURES SOUTH AND WEST.

I.—DEPTH OF PLANTING SEEDS.

J. D. B. De Bow, Esq.,

Dear Sir:—Your zeal and efforts in behalf of agriculture, induce me to send you the result of experiments which, I believe, will interest cultivators of the soil. Fully aware that changes will not be hastily adopted by the planting community, yet the desire to do good urges me to appear before your readers, as a practical farmer. Each individual thinks his knowledge is ample, while he is disposed to treat with levity, observations which point to new modes of planting, or culture.

Napoleon said the world was governed by epithets; and how true! The name of theorist, of book-farmer, has deterred many from improving their minds, and their condition in life. The name rebel, has consigned many a true heart to ignominy; the name tory, has doomed many an honest and faithful man to as bitter an end. The experience of the past proves that Napoleon was right, and will be so to the end of time. Were no one to risk abuse, nor propose anything but what would be received as orthodox, then would improvement cease. Would all writers be content to labor merely for the present, or having written, destroy all that did not please the mass, such men as Bacon, Milton, Burke, and others would not have poured instruction into the popular mind.

Convinced that the mass do not sanction experiments which expose their cherished practices, I would not have hazarded opinions so opposite to the old system, but for the kind attention of the publishers of the German works, by Boussingault and Bruger; of the Messrs. Appleton, and the Rev. E. G. Smith—to all of whom I tender many thanks, and heartily recommend their works, for sale by J. B. Steel & Co., of New Orleans. I received these works in 1845, but had, by various experiments, previously arrived at the conclusion, that we lost time and grain in too deep planting; that the prevailing practice was wrong, and detrimental to our best interests. I have so said repeatedly, and have generally been met with very strong objections. If these tanslations of Boussingault, Bruger, and other Continental writers, were read as freely as the last political quarrel, I would cease, and only say their experience is corroborated here.

Please understand me. I offer nothing not heretofore advanced by able practical planters, nor anything new; but I beg to call to the attention of all planters, what they have seen, and can know by experiment. To some it may be new, but they have not paid attention to it; but many will at once see there is truth, and reason too, in the facts. I will rely mainly on the experiments of others, for the simple reason,—"a prophet is not without honor, even in his own country,"—not because I had not tried nearly the same experiments, and arrived at the same practical conclusions.

Bruger tried the experiment with corn, at the various depths below stated, in a colder climate and earlier in the season than mine, which is as late as 6th June.

Planted	1	inch	deep,—seed	came	up	in	8 1-2 days.
	1	1-2	"	"	"		9 1-2 "
	2		"	"	"		10 "
	2	1-2	"	"	"		11 1-2 "
	3		"	"	"		12 "
	3	1-2	"	"	"		13 "
	4		"	"	"		13 1-2 "
	4	1-2	"	"	"		no rise.
	5		"	"	"		no rise.
	5	1-2	"	"	"		17 1-2 but died in a few days.
	6		"	"	"		no rise.

Some of those that did not rise from deep planting, were very feeble, and did not do much. The first one of mine was washed up; second, third and fourth came up on the sixth day, in the afternoon late; the others could not be found after some two weeks time.

Rye planted by Petri, to the depth of

1-2	inch,	came	up	in	11	days,	7-8 of seed vegetating.
1	"	"			12	"	all " "
2	"	"			18	"	7-8 " "

3	inches,	came up	in 20	days,	5-8	of seed	vegetating.
4	"	"	21	"	4-8	"	"
5	"	"	22	"	3-8	"	"
6	"	"	23	"	1-8	"	"

I tried wheat, some dibbled in four inches deep. Not the thousandth came up, nor did any make seed; whereas, those covered half to one inch came up finely, and made a fair crop of grain,—four varieties tried.

UGAZY in Andre, gives a table of the result of his very interesting experiments with rye, wheat, barley and oats. I give his deductions,—seventy-six experiments:

"Two-thirds to three-fourths of all the plants had thin root stalks only one inch under ground, and exactly those produced the most stalks; one fourth had roots one and a half inches below the surface, and had only half as many stalks; at two inches deep, only four in one hundred; at two and a half, only nine in one thousand,—only one of these produced a stalk."

For the last five years, I have plowed my land well before sowing grain; then covered the grain with a heavy brush, harrow, or horse rake,—believing that I had lost time and crops by plowing in grain. To explain why others succeed when plowing in their grain, it is only required to measure depth of plowing. I make good crops of rye, without plowing or covering, merely sowing down the grain on corn or cotton land, and know of one crop of oats, one hundred acres sowed down and plowed in; one hundred acres not plowed,—the latter believed to be best.

I was taught to plow in grain, and to cover corn with the plow; but in consequence of repeated failures to get a fair stand, I was led to examine, and to experiment. Necessity was the schoolmaster, and I was taught anew, to plant shallow, and have obeyed teaching. There are many who urge that deep planting is a protection against drouth. I ask them to examine corn that is planted two or three inches deep, say in two or three days after the leaves appear above ground. Again, when the plant is twelve inches high, and again when in tassel. They will find, at first, three roots extending from the grain with numerous small fibres attached thereto; the heart of the grain then also starts up the stem of the plant, which, on reaching near the surface, is formed into a knot or swelling, from whence proceed the three roots that sustain the plant,—the lower portion not larger than a broom straw, not growing on the stem; when examined in second condition is as small as many of the true roots; and when later examined,—is not found at all. We, therefore, find that the theory of deep planting to protect against drouth, is erroneous, as the roots even part off near the surface, and the first three roots perish away; and if they do not, are too small to be of any service, unless acting like "infantismal" doses of medicine do on the transcendentalists.

Corn, like all its (the grass) family, sends its roots superficially, and under favorable circumstances may be at considerable depth, but I do not believe it to be either essential or requisite, nor do I think nature is guilty of doing more than is needed. If the soil be properly prepared, and in condition to nourish the corn, the roots will not dip down. If corn be planted shallow, it will vegetate at a ower temperature of the atmosphere, because the earth is earlier warmed, an inch or so, than three to six inches; and by its vegetating earlier and more certain, we can get a stand more early in the season. Generally, in February, or 1st of March, there is weather warm enough to admit of corn vegetating, if it be planted about one inch; but if planted deeper, rain and cold supervene, which check the vegetating of it, and cause it to rot, or lie some days or weeks dormant. But, if there be a stand, even with deep planting, there is a certain loss to the plant, of the nutrition that the grain is destined to give; that nutrition being expended in bringing the plant, through the earth, where it must remain for a few days until the superficial roots have made sufficient growth to feed the plant. Bruger says—"The more shallow the seed was covered by the earth, the more rapidly the sprout made its appearance, and the stronger afterwards was the stalk."

Let any one notice corn, that is covered with the hoe. It comes up early, grows up immediately and vigorously. See also a volunteer stalk,—and why is it so? Because the grain to the young tender plant, by the sugar found in it, until the roots have extended themselves in search of food, which is done almost as soon as the blades are formed, and being no work of supererrogation, there is every

thing done that is needed, and nothing extra. More than this: the crop comes up regular, and grows off; a portion that is not so deep comes up earlier, and getting sooner over the check, grows off, whilst that planted deeper is more tardy in rising, and when up remains in the same condition for days.

In using the expression of deep planting, I mean not only deep planting, but deep covering. Corn, though planted in the water furrow, and covered shallow, is not liable to the same objections. If the land be placed in excellent condition, furrows opened with a shovel plow, so as to have pulverized earth in the furrow for the corn to lie on, and then covered with a harrow, it will do well late in the spring, say last of April; but if done in February or March, it is almost as bad as deep planting on the level.

All know, that cotton seed planted deep, early in the season will rot; whereas, if thrown on the earth, the rains will give them covering enough to get a rise. Small seed cannot rise through every depth of earth. Nature points out the true mode, and but for the birds and other enemies of the farmer, there would be no difficulty in getting a rise of grain &c. The principles of the science of agriculture are the same every where,—we being required to vary one mode of working according to circumstances. Thus, suppose it be a conceded point, that corn when planted shallow, will give a more certain stand, and more luxuriant stalks; yet, if we desire to plant a high piece of land in corn, in June, I would not hesitate to plant it deeper; because, the certainty of an early rise is too important, which is secured by the grain being placed in moist earth. This only forms an exception to the rule, and is taking the lesser evil.

I have now, I earnestly trust, been explicit enough to be understood, so as to give the matter a bearing on the interests of our planting community, and to deserve their attention. If so, I will have done all I desired, and beg to remain your friend and humble servant. A MISSISSIPPI PLANTER.

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II.—PRODUCTS OF FLORIDA—SUGAR.*

The Jacksonville Florida News remarks: "We are happy to perceive that very general attention is being awakened to the vast profit which results to the cultivation of the sugar cane in Florida. The climate and the atmosphere give us advantages over Louisiana, and there is no doubt but sugar can be made here equal in quality to any in the world.

"We extract the following paragraph from the National Intelligencer of the 25th ultimo. The cane to which it alludes, exhibited in the capitol, was some that was taken on by Hon. D. L. YULEE, Senator of that State. We saw this cane when he passed through Jacksonville, and, although it is large, it is by no means of the size which it usually attains in good soil. We trust it will have the effect to enlighten those who have hitherto supposed that the sugar cane was only grown in Louisiana:"

"The sugar region in Florida extends from the 30th to the 25th degree of latitude. It comprises within its limits a large amount of very fine land. The climate of the most northern portion of it has, we understand, an advantage of six weeks in the duration of the growing season over any other sugar-growing portion of the United States; and in the southernmost parts of the peninsula there is an entire exemption from frost. The cane is *tasselled* this season throughout the peninsula, a degree of maturity it does not attain in Louisiana or Texas.—The lands are at present cheap—say from $1.25 (the price of public lands) to $10 per acre. There are numerous rivers affording easy transportation on both sides the peninsula. Public sales of some of the State lands will take place in February next. These lands have been carefully selected by agents in bodies of half a section (320 acres,) and are generally well situated for the sugar culture. A sample of the Florida cane of this year, now to be seen at the capitol, is between ten and eleven feet long, entirely divested of top, and was cut nearly a month ago, before it had attained its proper growth. Still larger canes than this, however, are grown in Florida."

* For valuable papers upon Florida, see Commercial Review, vol. iv., 38, 244, 247, 248, 249.

The St. Augustine Herald gives the following interesting statement of the produce of 1 3-4 acres of land at Moccasin Branch, in St. John's county, which had been planted in cane by Mr. PAUL MASTERS.

10 barrels of sugar, 250 lbs. each, at 6 cents,	$150 00
100 gallons molasses at 25 cents,	25 00
37 1-2 bushels of corn at $1,	37 50
Cane sold,	20 00
	$232 50

This is at the rate of one hundred and thirty-three dollars to the acre, and was produced from high pine barren land, cow-penned. Mr. MASTERS is a poor man, without any negroes, and had only the assistance of a son of 18 years of age, to obtain the above together with an excellent crop of corn, peas and potatoes. Mr. MASTERS made his own mill, and boiled the juice down in a common pot in the open air.

Mr. FRANCIS ROGERO, from 1 1-4 acres of same quality of land obtained fifteen barrels of syrup and two barrels of sugar. In value:

465 gallons syrup at 31 cents,	$144 15
500 lbs. sugar at 6 cents,	30 00
	$174 15

This is at the rate of $139 32 to the acre. When it is considered that this is the produce of the poorest quality of land, and that the sugar was manufactured in the rudest manner, no one can doubt that the sugar cane alone should be cultivated by the planters of Florida. There are hundreds of thousands of acres of the richest land in this State lying in small bodies, of from 100 to 1000 acres, which might produce far more abundantly than the above.

III.—THE COTTON REGION OF THE UNITED STATES.

WE take the following observation from an article in a late number of the Southern Quarterly Review, as having interest with the major portion of our readers, and touching the great interest of our South Western country.

The climate suited for cotton, even in the United States, is far more limited than was formerly supposed. The truth is, the next few years will show that its production is not very far from reaching its maximum. It is not new and rich soil alone that gives a heavy yield of cotton. It requires a dry autumnal climate and a soil of moderate fertility, where the plant does not grow too large, and where, by the growth being exhausted in August, the bolls mature. The slopes towards the Atlantic, from the Alleghany, will be generally more favorable to the maturity and gathering of cotton than those towards the Gulf. The trade winds that are felt in the latter, and the peculiar formation and luxurious fertility of the vast alluvial soil upon the depressed vallies of all the large water-courses that empty into the Gulf of Mexico, will always make it a more moist climate than that of the Atlantic slopes. This will be peculiarly favorable to the generation of insects and diseases in the plant, and too large a growth of wood and weed, which will make it a more variable and uncertain crop. The soil of the Gulf region is very fine for cotton in the spring, far better than the Atlantic region, but the latter part of the season is not so favorable. All this shows that climate is as important an element in the permanent production of cotton as is soil, and justifies the belief that we have approached nearer our maximum production than is generally supposed. As far back as 1834, the Secretary of the Treasury estimated that we had 2,000,000 of acres in cotton. In 1839, we raised 2,177,835 bales; in 1843, the crop only reached 2,030,400; in 1842, it was 2,379,411 bales, and in 1844, 2,415448, (much the largest product of any year,) while in 1845, the amount barely exceeded 2,000,000 of bales, and in 1846, it was less than 1,800,000 bales. Even with the advantage of an autumn singularly favorable to the maturity and gathering of the cotton, there is little probability that the present crop will exceed 2,000,000 of bales.

We believe the number of acres in cotton has much increased within the last ten years, but not in proportion to the product. Probably the Secretary of the Treasury underrated the number of acres, even in 1834. He then allowed 250 to 300 ponnds nett cotton per acre as an average product, whereas the average throughout the United States does not exceed 185 pounds nett per acre, for a

series of years. But put it at 200 pounds, and to produce 2,000,000 of bales, at 400 ponnds each, would then require 4,000,000 of acres. We prefer the following estimates of our own to those made out by the Secretary of the Treasury.

The population engaged in or connected with the production of cotton in the United States, may be estimated at about 2,500,000, and of this number one-half may be put down as children, or under the working age, which would leave 1,250,000, and of this number there are rather more than half whites, say, at any rate, 625,000, and of this 625,000 one-half are females (312,500) who are not daily laborers in cotton at all, and there may be said to be also of that number 137,500 men in the towns and villages, mechanics, professional men and gentlemen of fortune, who are not cultivators of cotton. This, then would leave 800,000 laborers engaged in the culture of cotton, which, at five acres per hand, would make the 4,000,000 of acres.

And five acres per hand is a sufficient estimate, considering that in the mountain portions of South Carolina, Georgia and Alabama, and high up in Mississippi, Arkansas and Tennessee, they do not cultivate three acres per hand; while, below that, in the real cotton region, they may reach eight acres, and even, in sections, as high as ten acres per hand. It must also be considered that these 800,000 producers of cotton, cultivate, at the same time, at least six acres per hand in grain besides. Then say these 800,000 laborers produce annually two and a half bales per hand, at 400 pounds, and the result is, the 2,000,000 of bales as the cotton crop of the United States, or the 800,000,000 pounds nett cotton, which would give 1,000 pounds nett per hand. This is about correct, if we embrace the whole region engaged in cotton. Yet there are favored sections that reach even 3,000 pounds per hand; but an average, for several years, of 1,000 per hand, for the whole region engaged in cotton, is a full estimate. This 1,000 pounds, at ten cents, would be 100 dollars per hand for gross sales, and, deducting 40 dollars per hand for overseers' wages, physicians, implements, taxes and freigh tof cotton to market, &c., &c., there will remain 60 dollars nett per hand, or 48,000,000 dollars nett for the cotton crop, to the planters.

In the report of the Secretary of the Treasury, he puts the average product per acre at 250 pounds, and eight acres per hand in cultivation, both of which estimates are excessive, when we include the whole cotton region. It may be true as to south Alabama and Georgia and lower Mississippi. He also estimates the average value of cotton lands in cultivation at 20 dollars per acre, and the grain lands in cultivation at the same price. His language is: "Capital in other lands to support stock, raise corn, &c., at 20 acres to each of the 680,000 persons supposed to be engaged in cotton, worth 20 dollars per acre cleared, 272,000,000 dollars." All this is an over estimate. In this way he makes the capital vested in raising cotton amount to 771,000,000 dollars.

We prefer taking the census book of 1840, and, from the general tables there presented, making the following estimate of capital vested in raising cotton.

By excluding, as well as we can, all those in the cotton States who are engaged in the culture of rice and sugar, as well as those in the mountains of Georgia, Alabama and South Carolina, who produce grain only, and by adding those in North Carolina, Tennessee and Arkansas, who are engaged partially in producing cotton, we estimate the slaves at 1,000,000. And of this 1,000,000 we estimate 700,000 as workers, which is probably not excessive, when we consider that the South-West—the great cotton region—is newly settled and the number of children out of all proportion less than in regions peopled by the natural growth of population. To get the 800,000 laborers, we add 100,000 white laborers to the 700,000 slaves, which makes the estimated daily workers in cotton. Then we have—

1.	1,000,000 slaves,	at $500	$500,000,000
2.	Land, 4,000,000 of acres,	" 10	40,000,000
3.	Land in grain, 6,000,000 acres,	" 10	60,000,000
4.	Land, timber and pasture, 10,000,000 acres,	" 2	20,000,000
5.	Mules and horses, 300,000,	" 80	24,000,000
6.	Hogs and sheep, 4,200,000,	" 1	4,200,000
7.	Cattle, 200,000,	" 5	1,000,000
8.	Plows, 400,000,	" 2	800,000
8.	Other implements, tools, &c.,		600,000
			$650,600,000

We cannot understand in what way the capital vested, can be put down at more. The Secretary estimates the working slaves at 800 dollars per head, and the following item which he puts down in this language: "the maintenance of 340,000 more assistants, &c., at 30 dollars each per year, would require the income of a capital, at six per cent., of 167,000,000 dollars," we do not exactly comprehend.

We prefer the estimate we have made as above. This capital of 650,000,000 dollars, and at 6 per cent., would be 51,549,000 dollars. The crop of cotton estimated at 2,000,000 bales, of 400 pounds, would be 800,000,000 pounds, and this, at 10 cents would be 80,000,000 dollars. Take off expenses for overseers, physicians, taxes, freight on cotton, &c., estimated at 40 dollars per hand, (and this is little enough when we consider the children to be supported,) and we have 48,000,000 dollars as nett profit, which would be a little under 7 per cent. upon the capital vested. It must be recollected that this estimate is made upon cotton at 10 cents, and whenever it sinks one cent below that, the nett income falls off in a much greater proportion, as the expenses continue the same. And so, in like manner, when it rises above that point, the nett income increases vastly, the expenses being stationary.

When we consider that there is an increase and improvement in the annual value of the negroes upon every well regulated cotton farm, and that the great majority of planters raise or support their families from what may be called the offal of a farm, that is, from what is raised on it and is scarcely missed or calculated in its products, which is always the case when the owner lives on it, then we are induced to believe there is no investment known of capital as large as 650,000,000 dollars equal in value to that in cotton.

COMMERCE AND PROSPERITY OF WESTERN CITIES.

From the latest and best sources of information at our command, we give a brief summary, exhibiting the business of several western cities. At another time we shall glance elsewhere, and afford our readers a commercial outline, embracing the main cities of the Union. We begin with:

IMPORTS INTO ST. LOUIS FOR FOUR YEARS,

Commencing January 1, 1844.

ARTICLES.	1847.	1846.	1845.	1844.
Bacon, casks,	12,472	12,631	8,620	11,208
Beef, bbls.,	10,254	12,356	7,029	4,172
Bagging, pieces,	1,432	3,209	6,036	4,594
Bale Rope, coils,	10,798	5,802	9,229	14,316
Barley, sacks,	35,527	13,212	15,128	7,085
Buffalo Robes, bales,	7,782	5,976	3,567	3,593
Beeswax, bbls.,	759	532	531	577
Beeswax, sacks,	798	827	590	928
Corn, sacks,	478,449	312,281	44,341	25,270
Coffee, bags,	77,767	60,450	46,802	43,476
Flour, bbls,	435,019	223,670	132,196	96,203
Fish, bbls,	3,484	1,572	4,006	1,970
Fish, kits,	2,734	2,620	1,492	1,642
Hemp, bales,	81,525	34,739	30,985	62,732
Hides, ——,	71,877	84,980	72,918	42,802
Iron, bundles,	15,695	22 651	13,238	11,647
Iron, bars,	91,513	63,712	59,697	57,316
Iron, tons,	17,016	1,716	164	880
Lead, pigs,	767,556	763,489	757,908	621,900
Cotton, boxes, bags,	15,147	17,738	15,392	13,716
Lard, bbls.,	31,005	24,542	8,502	15,792
Lard, kegs,	12,247	19,351	5,362	19,709
Liquors, casks,	3,192	3,122	2 638	1,752
Molasses, bbls.,	21,554	16,774	11,876	12,068
Nails, kegs,	22,789	33.203	14,831	23,183
Oats, sacks,	101,203	59,620	21,960	21,916
Oil, Lard, bbls.,	478	274	292	688
Oil, Linseed, bbls.,	485	866	810	448
Oil, Castor, bbls.,	332	230	43	97

[TABLE CONTINUED.]

ARTICLES.	1847.	1846.	1845.	1844.
Oil, sperm, casks,	186	169	169	81
Pork, bbls.,	45,922	15,613	16,199	46,836
Pig Metal, tons,	2,263	2,504	1,303	1,110
Rice, tierces,	762	8,606	708	518
Sugar, hhds.,	12,661	13,898	10,237	10,738
Sugar, bbls.,	4,083	4,917	3,193	2,679
Sugar, boxes,	15,028	1,090	1,053	1,607
Salt, T. I., sacks,	22,983	15,823	20,278	49,683
Salt, G. A., sacks,	92,809	107,581	82,520	86,001
Salt, Kanawha, bbls.,	44,380	62,189	21,684	14,277
Salt, L. B., sacks,	17,632	28,478	20,387	17,454
Spirits Turpentine, bbls.,	619	740	317	419
Skins, deer, bales,	2,697	1,609	1,862	1,283
Seed, flax, bbls.,	4,992	4,081	2,045	4,273
Tobacco, hhds.,	10,935	8,767	12,856	10,013
Tobacco, boxes,	9,592	6,676	7,372	4,823
Tallow, bbls.,	2,217	1,754	1,705	5,331
Tar, bbls. and kegs,	5,658	5,235	4,942	5,141
Wool, bales,	2,107	1,903	1,899	1,377
Whiskey, bbls.,	30,247	29,832	28,445	24,147
Wheat, bbls.,	97,123	61,350	77,156	54,887
Wheat, sacks,	1,222,433	743,491	382,323	257,632

EXPORTS FROM ST. LOUIS FOR FIVE YEARS,

Commencing January 1, 1843.

ARTICLES.	1847.	1846.	1845.	1844.	1843
Bacon, assorted, casks,	14,085	13,641	7,628	14,953	17,676
Bacon, bbls.,	4,092	4,916	7,908	6,207	1,470
Bacon, bulk, tons,	675	569	148	292	302
bbls.,	12,798	20,113	5,324	5,694	11,288
Bagging, pieces,	3,363	4,784	8,182	4,248	5,007
Bale Rope, coils,	12,632	10,016	12,896	22,431	15,490
Beeswax, bbls.,	624	913	1,219	1,576	1,145
Beans, bbls.,	4,490	4,408	2,170	1,448	1,327
Buffalo Robes, bales,	3,879	3,630	2,717	7,404	8,441
Corn, sacks,	395,683	243,026	23,478	25,191	21,605
Flour, bbls.,	448,614	359,858	202,790	130,274	123,977
Hides,	73,586	44,962	50,828	57,220	38,175
Hemp, bales,	65,752	31,352	29,604	52,654	28,704
Lead, pigs,	591,791	663,505	637,033	553,719	538,762
Lead, bar, boxes,	3,136	2,932	1,850	4,442	2,624
Lard, bbls.,	39,513	26,412	13,318	25,127	22,187
Lard, kegs,	21,344	32,729	15,691	36,410	27,790
Oats, sacks,	16,957	41,176	8,434	7,889	7,396
Oil, Linseed, bbls.,	1,007	521	——	40	526
Oil, Castor, bbls.,	933	1,269	1,231	1,458	1,493
Oil, Lard, bbls.,	——	619	733	3,337	3,420
Pork, bbls.,	56,467	62,820	22,230	50,225	35,211
Pork, bulk, tons,	621	805	203	498	183
Rye, sacks,	2,250	1,167	1,750	4,188	3,120
Shot, kegs,	2,506	4,122	4,216	3,070	3,393
Skins, deer, packs,	3,700	2,162	2,677	2,726	1,034
Seed, flax, tierces,	660	1,118	1,306	2,103	2,432
Tobacco, hhds.,	9,851	8,450	11,284	9,500	19,730
Tobacco, manufactured, boxes,	4,841	6,183	7,832	8,844	7,734
Tallow, bbls.,	2,092	5,955	1,316	2,313	1,380
Wheat, bbls.,	10,318	16,231	29,796	16,864	20,691
Wheat, sacks,	640,237	217,319	68,634	60,894	438,331
Wool, bales,	1,414	1,335	1,326	1,048	311

TOBACCO.

Comparative Receipts, Sales, and Direct Shipments, for the last five years.

YEAR.	Total Receipts.	Sales Here.	Shipped Direct.
1843,	20,668	6,847	13,822
1844,	10,013	4,447	5,556
1845,	12,856	6,290	6,566
1846,	8,767	3,898	4,869
1847,	10,935	5,089	5,846

Gross amount of Receipts at the Custom House at St. Louis, foom January 1st, 1843 to January 1st, 1848.

From January 1st, 1843, to January 1st, 1844,	$ 5,554 79
From January 1st, 1844, to January 1st, 1845,	16,181 11
From January 1st, 1845, to January 1st, 1846,	16,312 11
From January 1st, 1846, to January 1st, 1847,	29,781 69
From January 1st, 1847, to January 1st, 1848,	73,908 10

II—CHICAGO.

In our numbers for September and November, for 1847, we gave the particulars of the great "Chicago Convention." Various committees were appointed by it. The present paper was prepared by Hon. Jesse B. Thomas, as a report, and kindly furnished us by the author. We publish the most material parts now, and shall on another occasion digest the remainder. We shall also direct our attention to the other reports as they appear.—EDITOR.

"Although we have been induced to regard 1832 as the period from which to date the commencement of Chicago, still it should be stated, measures intimately connected with the place, originated at an earlier period. Soon after the organization of the state government, at the second session of the legislature, an act was passed to construct the Illinois and Michigan Canal, and the subject continued to be legislated upon at almost every subsequent session, down to the present time. In 1826–7, Congress donated each alternate section of land for ten miles in width along the line, to aid the State in the construction of the work, and at the same time granted the right of way. The principal part of Chicago was included in this grant, and in 1829 commissioners appointed for the purpose, laid out the original town, amounting to about half a section on both sides of the river, and the next year, 1830, sold a few lots to pay the expenses of the survey. The original town is now the centre, and most valuable portion of the city. Prices of lots at this sale were very moderate, from $5 to $20. A few hundred dollars would then have purchased Lake street, now worth millions. Few persons here at that period probably dreamed that a place of seventeen thousand inhabitants would grow up here in the short space of fifteen years, although some may have foreseen its ultimate importance. The external appearance of things was far from encouraging. There were a few log, and two or three frame buildings scattered over the town site; besides a few more in different parts of the county of Cook, amounting to some twenty in all, besides the fort. A small beginning, it must be confessed for the Garden City, but it was fifteen years ago.

Down to 1837, as before intimated, very little was done at Chicago but operate in real estate. Very little or nothing was raised. Domestic wants of the community even, were supplied from the East. Vessels rarely came here, and the arrival of a schooner off the town was an event of the greatest importance. There were no roads, and scarcely any travel. A weekly mail on horseback, was first received from Niles in 1832; a one horse wagon succeeded in 1833, followed in 1834 by a four horse stage line, and a daily mail in 1837. Scarcely any domestic improvements of a durable character was attempted, except dwelling houses, although the Lake House, and two or three other substantial brick blocks and several warehouses date at this period. The harbor was commenced in 1833, and the first work done on the canal on the 4th of July, 1836. In 1834 the Chicago Democrat, and in 1835 the Chicago American, two weekly newspapers, were started. The school section, one mile square, of valuable land within the city limits, was sold about this time, for some forty thousand dollars. In the winter of 1836–7 the legislature passed the act incorporating the city.

In 1837, speculation having run its career, the bubble burst, and brought ruin to thousands who had become identified with it, and risked their all upon its chances. It was a severe calamity to Chicago. Without capital, without a currency, with undeveloped resources, without trade, the dissipation of this fatal illusion left her citizens nothing but a mountain of indebtedness, and the lands for which it had been incurred, now worse than valueless. Every thing remained stationary until about 1840, until times had improved, population had come in, farms had been opened in the country, trade had revived, and especially by he

wise interposition of law, the fetters were removed from business men, and enterprise permitted to act untrammelled for the advancement of private interest, and the welfare of the community. The condition of things during this period would have been more deplorable than they were, but for the partial benefit derived from the canal, which was in progress of construction, and the harbor, upon which several appropriations were expended.

About 1840 Chicago experienced the first healthy growth, and real substantial prosperity; not, however, so strikingly perceptible previous to 1843, as the four years following. From 1843 to the present time, the place has advanced with a rapidity unexampled in the history of cities. Capital to some extent, has been introduced, the country generally settled, the soil has been brought to furnish productions for export; real estate, both lots and lands, has become valuable; our citizens, many of them, have become wealthy, and population and trade, both export and import, have, during the short period of four years, more than doubled—very nearly trebled.

The most satisfactory evidence we can furnish, not only of what Chicago now is, but of what she has been, and may reasonably become, will be found in the following statistical tables of population, trade, etc., to which attention is directed for that purpose:

POPULATION OF CHICAGO.

1840,	4,853	1845,	12,088
1843,	7,580	1846,	14,199
		1847,	17,000
Increase,	2,727		

TRADES, OCCUPATIONS, AND PROFESSIONS IN THE CITY OF CHICAGO, NOV. 1, 1847

Architects, 2; Attorneys, 56; Auction and Commission Stores, 8; Bandbox Manufactory, 1; Bankers and Brokers, 6; Barbers, 15; Bath House, 1; Billiard Saloons, 3; Blacking manufactory, 1; Blacksmiths, 12; Bookbinders, 2; Booksellers, 5; Boot and Shoe Makers, 25; Bowling Saloons, 5; Brass Smith, 1; Brewers, 3; Builders, Master, 17; Cabinet and Chair man, 12; Churches, 20; Clothing Stores, 11; Coffee Houses, 9; Colleges, 3; Commission Houses, 3; Cradle Maker, 1; Confectioners, 4; Coopers, 14; Crockery Stores, 3; Dentists, 5; Depositories, 3; Door Factories, 4; Drug Stores, 10; Dyeing Establishment, 1; Dry, Fancy and Staple Goods, 8; Dry Goods and Grocery Stores, about 300; Engravers, 2; Engine Fire Companies, 10; Flour Stores, 2; Forwarding, Storage and Commission, 18; Foundries, 6; Fruit Stores, 9; Fanning Mill Makers, 2; Glove and Mitten Man, 2; Grinder and Cutler, 1; Groceries, wholesale and retail, 65; Gunsmiths, 2; Hardware Stores, 17; Hat, Cap, etc., Stores, 6; Hotels and Taverns, 25; Hydraulic Companies, 2; Ink Manufactory, 1; Ins. Com. and Agencies, 13; Justices of the Peace, 5; Land Agencies, 4; Land Offices, 2; Leather Store, 1; Libraries, (12,500 vols.) 3; Liquor Stores, (wholesale,) 1; Livery Stables, 7; Locksmith, 1; Looking Glass manufactory, 2; Lumber Dealers, 24; Mill Wrights, 2; Marble Factory. 1; Markets, 15; Millinery, 15; Mills, 5; Notaries Public, 6; Newspapers, 4 daily, 6 weekly, and 4 monthly,—total 14; Oil, Soap and Candle Manufacture, 8, Packing Houses, 6; Painters and Glaziers, 8; Painters, Ornam. and Min, 2; Portrait Painters, 2; Pawnbrokers, 3; Physicians, 31; Potteries, 1; Printing Offices, 11; Printer's Wareroom, 1; Reading Room, 1; Starch Manufactory, 1; Steam Planing Mills, 2; Schools, Public, employing 10 teachers, and numbering 1500 scholars, 4; Schools, private, employing 20 teachers, and numbering 1,000 pupils, 15; Saddle and Harness, 8; Ship Builders, 3; Ship Chandlers, 2; Societies, 33; Tailors, 25; Tanneries, 2; Theatre, 1; Tobacco and Cigar Manufac., 3; Undertakers, 2; Upholsters, 1; Wagon Makers, 13; Watchmakers and Jewelers, 7.

TABLE showing the exports of leading articles from Chicago, in six years, from 1842 *to* 1847, *inclusive:*

	Wheat. Bush.	Flour. Bbls.	Beef and Pork. Bbls.	Wool. Pounds.
1842,	586,907	2,920	16,209	1,500
1843,	628,967	10,786	21,492	22,050
1844,	891,894	6,320	14,938	96,635
1845,	956,860	13,752	13,268	216,616
1846,	1,459,594	28,045	31,224	281,222
1847,	1,974,304	32,538	48,920	411,488

TABLE exhibiting the amount of goods, wares, and merchandize received at Chicago, from the opening of navigation in the spring of 1847, *to November* 1*st, near the close of navigation,* 1847; *not including goods landed here and taken to the interior; compiled from the original invoices of merchants.*

Dry Goods,	$837,451.22	Liquors,	$86,334.67
Groceries,	506,027.56	Tobacco and Cigars,	3,716.00
Hardware,	148,811.50	Ship Chandlery,	23,000.00
Iron and Nails,	88,275.00	Tools and Hardware,	15,000.00
Stoves and Hollow-ware,	68,612.00	Furniture Trimming,	5,564.07
Crockery,	30,505.00	Glass,	8,949.24
Boots and Shoes,	94,275.00	Scales,	4,044.55
Hats, Caps, and Furs,	68,200.00	Coaches, &c.,	1,500.00
Jewelry, &c.,	51,000.00	Looking Glasses, &c.,	2,500.00
Books and Stationery,	43,580.00	Marble,	8,000.00
Printing Paper,	7,284.11	Oysters,	2,500.00
Presses, Type and Printing materials,	7,432.50	Sportman's articles,	2,000.00
Drugs and Medicines,	92,081.41	Musical Instruments,	6,426.00
Paints and Oils,	25,460.00	Machinery, &c.,	30,000.00
Total value of imports of merchandise,			$2,259,309.83

TABLE of imports of miscellaneous articles.

Salt, barrels,	24,817	Coal, tons,	15,782
" sacks,	5,537	Water lime, bush.,	1,618

Value, $117,210.29

And numerous other articles not here enumerated, such as pig iron, white fish and trout, fruit, grindstones, cider, &c., the precise quantity not known, but in considerable amount.

TABLE exhibiting the exports from the port of Chicago from the opening of navigation, 1847, *to Nov.* 1*st,* 1847.

Wheat, bushels,	1,974,304	Flax Seed, bushels,	2,262
Flour, barrels,	32,598	Mustard " "	520
Corn, bushels,	67,315	Timothy, " "	536
Oats, "	38,892	Hay, tons,	415
Beef, barrels,	26,504	Cranberries, bushels,	250
Pork, "	22,416	Buffalo Robes, bales,	60
Hams and Shoulders, lbs.,	47,248	Dry Hides,	8774
Tallow, pounds,	208,435	Deer Skins, pounds,	28,259
Butter, "	47,536	Sheep Pelts,	1,133
Beans, bushels,	430	Furs, packages,	278
Wool, pounds,	411,088	Ginseng, pounds,	3,625
Tobacco, "	28,243	Ashes, barrels,	16
Lard, "	139,069	Bristles, pounds,	4,548
Leather, "	2,740	Glue,	2,480
Beeswax, "	5,490	Brooms,	3,168
Oil, gallons,	8,793	White Fish, barrels,	1,229
Lead, pounds,	10,254	Barley, bushels,	400
Hemp, "	6,521		

Value, $2,296,299

Besides a large amount of merchandize, produce, provisions, grain, horses, cattle, salt, and supplies of all kinds sent to the lumber and mining regions, and different ports on the upper and lower lakes.

EXPORTS AND IMPORTS.

	Exports.		Imports.
1836,	$ 1,100.64	1836,	$325,203.90
1837,	11,065.00	1837,	373,677.12
1838,	16,044.75	1838,	579,174.61
1849,	33,843.00	1839,	630,980.26
1840,	228,635.74	1840,	562,106.20

[TABLE CONTINUEED.]

	Exports.		Imports.
1841,	$348,862.24	1841,	$564,347.88
1842,	659,305.20	1842,	664,347.88
1843,	682,210.85	1843,	971,849.75
1844,	784,504.23	1844,	1,686,416.00
1845,	1,543,519.85	1845,	2,043,445.73
1846,	1,813,468.00	1846,	2,027,150.02
1847,	2,296,299.00	1847,	2,641,852.50

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III.—PITTSBURG.

With its dependencies of Birmingham, Sligo, Alleghany City, and the like, which lie across the Monongahela and Alleghany rivers, the population of Pittsburg is said to range between 60,000 and 80,000. The Iron Works are more extensive, perhaps, than those of any other city in the Union. There are eleven rolling mills in and about Pittsburg, of which eight are capable of producing 4,000 tons, each, of manufactured iron, annually, and employ about 150 hands to the mill. This iron is of a superior quality, and is used for boilers, axles, wire, sheets, and the like. The pig metal is supplied principally from the charcoal furnaces along the river. Something like 75,000 tons of pig metal is consumed a year, between the mills and foundries. The manufacture of glass is carried on extensively. Besides fourteen establishments, the work of which is known as country glass; there are seven flint glass factories in the vicinity, six for window glass, five for green glass and one for black glass. These employ twenty-five or thirty men each, and more than a million of dollars is invested. Nail factories are also numerous and upon a large scale. One has a capacity of 2000 kegs per week, and others are nearly equal to it. The demand is greater than the supply, and the orders extend from Buffalo to New Orleans. It is estimated that sixty steamers will be built at Pittsburg the present year.

The trade with the Lakes has doubled itself every year since 1844, owing to the facilities of communicating through the two great avenues to Erie and to Cleveland.

Table of some of the principal articles of exports and imports via canal in 1846 and 1847.

EXPORTS.			IMPORTS.		
	1847.	1846.		1847.	1846.
Cotton, lbs.	1,056,138	1,000,971	*Agricultural*		
Hemp	3,311,618	1,287,886	Not specified, lbs	1,257,620	871,500
Tobacco, leaf	14,777,059	24,696,742	Oats, bushels	21,360	19,080
Groceries,	1,978,822	1,571,889	Leather, lbs	312,239	386,225
Hardware, cutlery,	246,887	239,353	Coffee, lbs	9,927,605	10,920,993
Iron, pigs	65,537	2,675,341	Dry goods, lbs	23,201,074	12,651,818
—— castings	250,910		Groceries	7,833,925	6,923,856
—— blooms	13,836	333,702	Hardware and Cutlery, lbs	14,501,693	10,522,463
—— cast steel	549,416	319,736	Coffee, lbs	384,966	429,139
Lead	188,078	325,085	Iron pig, lbs	21,979,353	15,410,661
Nails and spikes	51,760	82,732	—— castings	124,662	
Bacon	12,713,427	21,661,236	—— blooms	14,942,390	13,890,707
Beef, pork	41,225	19,620	—— bar & sheet	4,397,268	2,833,879
Butter	747,645	800,265	Nails & sp's, lbs	15,886,711	575,402
Flour, brls	297,940	156,412	Fish, lbs	5,977,891 brls	19,600
Lard lard oil, lbs	5,319,378	2,929,286			
Tallow	62,946	291,313			

STATEMENT, *showing the number and extent of the Cotton Factories of Pittsburg.*

Companies.	Bales.	Number of Spindles.	Weight of Yarn daily.	Weight of Cloth daily.	Yards of Cloth per annum.	Number of Hands.	Looms.	Product.
Hope.....	3,100	6,500	4,000	....	.....	275	...	$216,000
Eagle.....	3,000	5,700	3,800	....	.....	250	...	205,200
Union.....	1,600	4,500	1,500	500	.....	200	40	116,500
Pittsburg	1,600	5,300	....	2,000	1,620,000	200	150	138,000
Penn.....	2,400	6,200	....	3,000	2,410,000	260	210	207,000
Starr.....	800	2,500	....	900	729,000	80	75	62,100
Gray's.....	400	1,200	500	....	.....	40	...	27,000
	12,900	31,900	9,800	6,400	4,759,000	1,305	475	$971,800

In addition to her numerous establishments, Pittsburg has some twenty to twenty-five foundries in successful operation, in the manufacture of cannon cotton presses, sugar mills, plows, and the like.

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IV.—WHEELING.

The enterprise and activity of this town may be seen in the following results: The rolling mill produces at the rate of $500,000 annually, and another large establishment of the same kind is progressing. The foundries yield about $150,000, engine shops $100,000, cotton factories $80,000, steel factory $90,000, wagon makers $150,000, paper mills $140,000, tallow chandlers $100,000, and glass work $200,000, silk factory $75,000, copper and tin workers $50,000, boat yards $150,000, cabinet makers $100,000, tobacco $120,000, saddle and harness makers $75,000, chairs $80,000, white lead $25,000, hat and caps $50,000, besides numerous other works of various kinds, yielding in all, not less than four millions annually. These establishments are all prosperous, having as much as they can do and having a market to be supplied that would be equal to the supply of five more establishments in each branch of business.

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V.—CINCINNATI.

The following table shows the exports from Cincinnati for four years past of the leading articles of produce. The exports of 1844, '45 and '46, do not include the shipments up river, but only to Southern ports. The movement, however, shows an increase in the trade of that flourishing city:

ARTICLES.	Sep. 1, '43, to do, '44.	Sep. 1, '44, to do, '45.	Sep. 1, '45, to do, '46.	Sep 1, '46, to do. '47.
Beef, bbls. - - - - -	8,878	14,574	8,432	10,367
Do. trcs. - - - -	5,243	3,522	8,874	7,970
Corn, sacks, - - - -	4,151	233	528	258,198
Corn Meal, bbls. - - -	621	1,616	1,207	88,182
Cheese, casks, - - - -	543	716	169	1,132
Do. boxes, - - - -	36,897	43,705	37,099	70,104
Flour, bbls. - - - -	204,589	167,601	212,139	581,920
Lard, bbls. - - - -	29,266	24,227	28,481	49,878
Do. kegs, - - - -	201,726	180,559	152,079	150,823
Bacon, hhds, - - - -	15,454	15,454	18,366	31,538
Do. trcs. - - - - -	2,609	2,609	2,891	7,894
Pork, bbls. - - - -	129,399	103,036	124,024	137,218
Do. lbs. - - - - -	1,186,550	694,755	410,891	3,478,856
Whisky, bbls. - - - -	90,052	133,158	103,953	183,928
Oats, sacks, - - - -	6,873	9,966	22,091	140,067

The increase in Breadstuffs is particularly to be noted.

COMMERCE OF THE LAKES AND WESTERN RIVERS.

The nett money value of the *lake commerce* for the year 1846, was $61,914,910; having nearly doubled in five years. For the same year the total amount of American lake tonnage was 106,836 tons, and of merchandise 3,861,088 tons, British, 30,000 tons. Estimates from highly intelligent authority make the cost of constructing this tonnage $6,000,000. The passenger trade is also an important item in lake commerce. The number of passengers, in all directions, is stated at 250,000; which, at $5 each as average charges, gives for its value, $1, 250,000. The number of mariners employed was 6,972.

The aggregate population depending on the lakes for means of communicating with a market, in 1846, was 2,928,925.

Of the *Western rivers*, i. e. the Mississippi, and its direct and indirect tributaries, it appears from the official returns of the Treasury department, that the steamboat tonnage for the year 1842, was 126,278; and for 1846, 249,055. It is supposed that there are 300,000 tons of other boats (not steamboats) employed on these rivers, which, added to the steamboat tonnage, gives for the year 1842, an aggregate of 42[illegible],278, tons. The flat-boat navigation is supposed to carry to market, in one year, 600,000 tons of produce, while the steamboat freight amounted to 1,262,780 tons, or a total merchandize transported to and from New Orleans on the Western rivers, (exclusive of the way-trade,) for 1842, of 4,862,780 tons. The probable money value of this commerce, for the same year, can be stated at $50,506,903; and for 1846, according to a statement from the Treasury Department, $62,206,719. This includes, of course, only the *direct* river commerce, and not that immense amount of commodities interchanged between place and place on the Western rivers, and which forms no part of the New Orleans commerce. Of this latter, the total *nett* value can be stated for 1846, at $148,306,710—the *floating* value cannot be less than double this amount. The passenger trade, too, is very great, and is supposed to have yielded for 1846 $3,191,982, making the total commerce of the Western rivers, $151,498,701. The steam tonnage for 1846, is stated at 249,054 tons.

The total cost of the river craft, engaged in this trade, was $12,942,355, and sustained at an expense of $20,196,242 per annum. The number of hands employed (not shore employees) was 25,114. These amounts the Bureau considers too small, or at least not at all exaggerated; and that if $183,609,725 be assumed as a reliable exposition of Western commerce for 1846, instead of $151,498,701, it will more nearly approximate to the truth.

The total *population* depending upon the Western rivers as a means of communication with a market, for the year 1846, was 6,576,027—the rate of increase 1840 to 1845 having been about 5 per cent. The Mississippi, with its tributaries, which traverse every section of this immense valley, furnish 16,674 miles of good steamboat navigation, thus affording great natural facilities for the development of its unlimited resources.

These facts, in reference to the commerce of the lakes, (says the Report,) and Western rivers, justify the following conclusions:

1st. That the nett moneyed value of the commerce of the lakes and Western rivers, including the passenger trade, amounted, for the year 1846—

Of the lakes to	$63,164,910
Of the Western rivers to	$183,609,725
Aggregate	$246,774,635

2d. That the population depending upon the lakes and upon the Western rivers as a means of communicating with a market, was, for the year 1846—

For the lakes	$2,928,925
For the Western waters	6,576,027
Aggregate	$9,504,952

3d. That the number of hands employed in this commerce as mariners, exclusive of shore hands, for the year 1846—

For the lakes	6,972
For the Western waters	25,114
Aggregate	32,086

And it may be added that the total amounts which have been appropriated and expended for lake harbors, and for the improvement of the Western rivers, from the year 1806, when these appropriations by the General Government commenced, up to, and including the last appropriations of 1845, are—

For the lake harbors	$2,790,500
For the Western rivers	2,758,800
Aggregate	$5,549,300

The tonnage of Lake Champlain is stated at 3192 tons, and the value of the export and import trade for 1846, $11,266,050. The total amount appropriated for the improvement of its harbors is $191,500. The tonnage of Lake Ontario is stated to be 65,636, of which 42,325 tons are British, and 25,311 American. The export and import trade for 1846 is stated at $14,025,907, and the total amount expended for its harbors, $608,902. On Lake Erie, the total amount expended for harbor improvements is $1,348,249, and the total amount of its commerce (exports and imports) in 1846, $94,358,350. The total amount of expenditures on Lake Michigan for harbor improvements, is $604,447; amount of commerce not known. For Chicago, however, it amounted, in 1846, to $3,027,150.

The total amount of American lake tonnage is 106,836 tons. The total of British lake tonnage is 46,675 tons, making a combined tonnage of 153,411 tons.

CHILLICOTHE.

The chief town of Ross County, Ohio, and situated in the heart of the Scioto Valley, one of the richest valleys of land in the United States, is Chillicothe. Different in its origin from almost every other town in the State, having been mostly settled by Virginians, Kentuckians and "middle Pennsylvanians," it is distinguished for its refinement, hospitality and intelligence. On a lovely and extensive plain, embotomed on every side, save that through which the "clear Scioto winds its way," with lofty hills, it presents to the traveller a landscape surpassing in beauty any other point within the limits of the West. At no distant period it promises to be a large manufacturing city, as it lies in near proximity to the the vast fields of Coal and Iron in South eastern Ohio, a large portion of which must eventually find its way to this place by means of the projected Belpre and Chillicothe Rail Road, to pass directly through the mineral region. At present the only outlet of the rich valley in which Chillicothe is situated is the Ohio and Erie Canal, and through this communication all her exports are made. In addition to the table below exhibiting the trade of the city, for the past year, we may mention the fact that the value of "fatted cattle" driven this year to the Eastern cities for a market from the Scioto Valley, amounts to about one million dollars.

Statement of the Principal Items of Property received at and cleared from the port of Chillicothe, during the year

RECEIVED.		CLEARED.	
Fish	446 brls	Flour	49,871 brls.
Salt, Ohio,	5,912 "	Corn Meal	3,094 "
" from O. R.	4,453 "	Pork	31,821 "
" N. Y.	2,687 "	Whiskey	543 "
Mineral Coal	131,150 bush.	Corn	196,780 bush
Wheat	56,422 "	Wheat	34,400 "
Furniture	97,323 lbs.	Butter	14,000 lbs
Cheese	40,953 "	Furniture	85,000 "
Coffee	444,974 "	Bacon	2,226,475 "
Cut Stone	153,645 "	Coffee	32,200 "
Crockery	83,072 "	Cut Stone	182,930 "
Gypsum	20,080 "	Crockery	15,400 "
Iron	239,800 "	Eggs	23,860 "
" Cast	54,000 "	Feathers	19,140 "
Mdze	1,661,570 "	Hogs' Hair	96,760 "
Molasses	359,150 "	Iron	293,600 "
Nails	225,700 "	" Cast	42,700 "
Sugar	531,900 "	Lard	2,411,000 "

RECEIVED.		CLEARED.	
Tobacco - -	117,200 lbs.	Mdze - - - -	165,200 lbs.
W. Lead - -	30,400 "	Molasses - - -	26,700 "
Sundries - -	677,600 "	Nails - - - -	23,800 "
Mt. brls (No.) -	24,280 "	Sugar - - -	60,800 "
St've & Head -	415,637	Wool - - -	42,600 "
Cords Wood -	1,102	Sundries - -	821,400 "
Feet Lumber -	240,390	Feet Lumber - -	69,400

—The following remarks from the Chillicothe Gazette, evince a spirit which we doubt not pervades the entire population of Ohio, in no lesser force than the citizens of Chillicothe. The advantage of this State for maufacturing purposes have long been impressed upon the minds of her people.

"An amount of Manufacturing Capital, apportioned to the above, and enough whereon to base a population of 20,000 people, with churches, schools, lyceums, daily papers, &c., to match, *might* be reckoned as follows :

$ 150,000 in the manufacture of Woolens ;
200,000 in the fabrication of Cottons ;
75,000 in the making of Edge-tools ;
100,000 in miscellaneous manufactures, such as boots, shoes, sash, cooperage, &c., &c. We have the coal, provisions, site, water conveyance, &c., &c., for all these, and, what is very imporant, the market of consumers is all around us. Can there not be a combined effort made to divert a portion of the capital that is here into a business which cannot fail to be profitable, managed with due prudence? May not capitalists from abroad, with money seeking investment, be induced to come here and put their money into a 12 or 15 per centum business?"

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We take from a late number of the Free Trader some of the statistics exhibiting the important branches of trade conducted at Natchez. As we have never had an oppertunity before of collecting this information from any source, we publish it with very little condensation. Ought not the other cities of the West to furnish us, in the same manner, their statistics? Will any one furnish us, for example, with a sketch of Memphis? We should be most delighted to publish such matter for its manifest importance.

The foundry of Wilkins, Humason & Co. give employ to 28 or 30 engineers, artificers, blacksmiths, moulders and hands, and we are informed by one of the proprietors that a much larger amount of capital might propfitably be invested in opening other branches of the business, such as the manufacture of plows, harrows and other implements for plantation use. Wilkins, Humason & Co. have orders for their gin house, sugar house, steam mill and steam boat machinery from Baton Rouge and Donaldson on the Mississippi to Memphis, including all the plantations on the river bayous of western and northern Louisiana. In these orders they are able to compete in price and in the perfection of their work with the best foundrys of Cincinnati and Pittsburg—having besides the advantage of being able to send their own engineers to put the machinery in action, or to make the necessary repairs. They have on hand orders for five new engines.

The Natchez Brass and Iron Foundry, owned by Mr. Maurice Lisle, is one of the most complete establishments in the Southwest. Mr. Lisle, has had as many as 23 operatives in employ, at the same time in his foundry, He has orders for all the work he can do until next October, and will employ 25 or 30 hands.

In the immediate vicinity of the foundry establishments another valuable branch of manufactory, most important to the planting interest, is carried on—"The Gin Stand Manufactory" by Mr. Amasa Davis, long known and appreciated in this community, as one of the best Gin Stand builders in the South. Mr. Davis gives employ to four or five workmen, and executes work annually to the amount of ten thousand dollars.

The coachmaking and repairing business is carried on to some extent by the proprietors of the different carriage repositories of the Messrs. Clark & Lindsay, G. C. Dinkerman, Whitcomb and Valleau.

Add to the demand for carriages, wagon making to an equal amount should be carried on here, as far more suitable to our wants and wishes than Pittsburg ma-

nufacture, patterned and fashioned for far different agricultural operations than are ever carried on in the Southern plantations. Almost a fortune could be made yearly in a wagon and wheel manufactory in Natchez, where any pattern could be made to the planter's order, and where the manufacturer would feel a pride in the lasting character and excellence of his work.

The wagon-making and wheelright business is carried on to some extent, in connection with their smithery, by Messrs. France & Bogart on Pine street; also the wood-work branch of wagon-making by Mr. Hoar on State street, and by Mr. Whitcomb on Main street,—yet by no means to that extent as to supply the demand and supercede exportation from Pittsburg and Cincinnati.

The two great saddle and harness making establishments of Natchez—that of Dicks & Waters on Main, and that of Livingston & Rountree on Franklin street—work about thirty hands, and turn out work of such excellence, splendor and cheapness, that no foreign competition is either feared by these gentlemen, or attempted by others—articles of Northern manufacture not even brought into Natchez as merchandise. The example, the success and rapidly accumulating fortunes of these gentlemen show what can be done in Natchez manufactures by practical and persevering capitalists.

In the tin, copper and sheet iron manufactory, the firms of Walker & Wev, Walker & Collins, and the Kennedys are doing a profitable business. The necessity of cisterns with tin pipes and conductors to all the edifices in Mississippi and Louisiana gives this branch of manufacture a firm and secure foundation.

The gun making business carried on in three manufatories, that of Fitzpatrick, Odell and Newcomb, is lucrative, employing from three to six artificers in each, and, we are informed by one of the gentlemen, that many more could be employed in the manufactories if good workmen could be found.

The establishments of Messrs. Profilet, Cockrell, David, Macmichael, Colton and Macpherson employ several jewellers with a good return of profit; and the bindery and blank book manufactory is successfully conducted at Major R. Elward's establishment on Main street.

The largest blacksmithing establishments employ from four to six hands each, and finding full and lucrative employ, are those of Messrs. Krizer, Donan, McCaffrey and Bogert.

The leading boot and shoe manufactories (and there are none more celebrated in any city) are those of Messrs. Swain, Hughes Essig and Batterson.

The manufacture of gentlemen's clothing is carried on by several firms in the Parisian, the Broadway or the St. Charles street, while some of the larger clothing stores are furnished with garments and order, made at the shops of New York, Boston and Philadelphia.

The mostof the bricks used for building in the city and county are made at the extensive yards of Messrs. Grove, Reynolds and Fox, where from eight to fifteen hands are employed, and any order for brick work can be instantly filled and executed.

The steam saw-mill of Brown Cozzens, at the Middle Landing, employs ten hands, works the engine from 5 in the morning to 8 in the evening, fifteen hours each day, and turned out, during the year 1847, a little over eleven hundred thousand feet of boards and sawed lumber of all kinds, averaging in price eighteen dollars per thousand—making a total of $19,800 worth of work in a year.

The engine of Andrew Brown's splendid mill is in action fourteen hours each day, and its various operations employ from forty to fifty hands, producing a daily average of 15,000 feet of all kinds of lumber, or four millions five hundred thousand feet in a year. The lumber turned out at this mill is of such value that its average price is twenty-five dollars per thousand, amounting, by actual sales, during the year 1847, to *fifty-six thousand dollars*, with an increase of stock on hand of half a million feet of sawed lumber. One half of the above sum, or $28,000, was a clear profit over and above all expenses—a sum larger than that produced by any two of the best plantations in the State.

The shingle making and wood business along shore, at and near the various landings, probably employs from fifty to sixty hands all the year round.

The plough making business is successfully carried on here a part of each year by Capt. Wood, of Maysville, Kentucky, who has eight or ten workmen employed on a flat-boat, and gives great satisfaction to planters by his manufacture of choice ploughs and harrows.

There is also a pottery establishment at the Upper Landing, in faubourg Brown, employing several hands, at least a part of the year.

The cotton factory in Natchez, against Lowell, has only to contend with the higher price of fuel in the propulsion of the steam engines; against which we can offset the transportation of the raw material three thousand miles, with the transit charges of brokerage, storage, factorage; the transportation of the wrought fabrics back again, to which the merchant's profits are to be added. All these added will make fifteen per cent. in favor of Natchez manufacture, especially since it has been conclusively proved by experiments in the tates of Georgia and Alabama, that young negroes, of both sexes, can be as readily learned the business and as profitably employed in this as in any other department of labor.

In Natchez there are four hundred householders, the most of whom are identified with its fortunes, and have made the beautiful and healthful locality a lifetime home. There are also merchants of high, unimpeachable character, whose wealth flows as free as water for the promotion of any public charity, for the promotion of morals, religion, or education. During the last year, the trade of Natchez merchants, embracing only their sales of merchandize, amounted to *one million one hundred and nineteen thousand eight hundred and six dollars!*

It should be evident to all that the mercantile business of Natchez cannot be extended farther; the only hope for the future expansion and prosperity of the city lies in the manufacturing interest. Here is our hope—the sheet anchor of future success—the security that the magnificent scheme of free educatio so liberally instituted in Natchez, shall be carried out in full consummation, while plenty shall reign in its homes, and happiness dwell in each bosom!

SOUTHERN RAILROADS.

We subjoin a statement of the principle railroads in the Southern States, together with the cost of travel on each. Several works are in progress, which will materially extend the lines. When these are accomplished, we shall endeavor to exhibit the cost and dividends, as well as other specific information concerning all.

Companies.	Miles.	Fare.
In Alabama.		
Montgomery and West Point,	60	$3 00
In Georgia.		
Western and Atlantic, (State)	100	5 00
Georgia,	171	7 00
Central,	191	7 00
Macon Western,	101	4 00
	563	
In South Carolina.		
South Carolina,	136	6 75
Columbia,	68	3 38
	204	
In North Carolina.		
Wilmington and Welden,	161	5 00
Gaston and Raleigh,	87	4 00
	248	
In Virginia.		
Petersburg and Roanoke,	63	3 00
Richmond and Petersburg,	22	1 00
Richmond, Fredericksburg and Potomac,	133	5 50
Winchester and Potomac,	32	2 00
Louisa,	50	4 00
	300	

There is no reason why the stock of Southern railways should not be profitable. As a specimen, we take the report of the President of the Petersburg Railroad Company, for the year ending 30th September last:

Total receipts for passengers and freight,	$179,867 94
Expenses of every kind, repairs, &c.,	73,637 13
Income after payment of expenses,	$106,230 81

The cost of the road was $801,611 52;—the dividend, therefore, is a fraction over 13 per cent.

In his late report, the President of the South Carolina Railroad Company sums up the operations of the year:

Gross receipts from 1st Jan'y. to 30th Dec., 1847,	$655,575 30
Current expenses in same period,	303,480 40
Nett revenue,	$352,094 90

AMERICAN COPPER AND IRON ORES.

Until within a few years, copper formed little or no part of the mining business of the U. States. Now, the yield is immense. About 120 companies, with a capitol of more than $4,000,000, are reported for operations in the district of Lake Superior. The mineral agent has given the quantity of ores and metals raised and shipped during the year ending 30th Sept. last, by the following companies:

	Ores and metal.	Am't Shipped.
Lake Superior Company,	1,114,841 lbs.	31,441
Eagle Harbor Company,	321,000	81,164
Copper Falls Company,	317,050	15,263
Pittsburg and Boston Company,	7,283,340	1,497,481
North West Company,	190,000	7,264
Lac La Belle Company,	200,000	1,328
Suffolk Company,	300,000	383
Algonquin Company,	120,000	11,135
Bohemia Company,	80,000	4,049
All others making reports,	1,327,969	40,206
	10,214,200	1,693,805

Four smelting works were in the course of erection, to be ready the next season. The mineral resources of the North West are, we are gratified to perceive, in progress of rapid developement, and will greatly increase our exports, besides doing much for home consumption.

It would be interesting and valuable to show the yield of the whole country,—the iron of Pennsylvania, Missouri, and other rich mineral States. At a future day, when materials for this purpose can be had, we shall aim to collect and publish full tables on the subject.

As curiosity prevails to know the relative proportions between native and pig copper, we refer to the foundry of Messrs. Hooper & Co., Boston, where thirty-two masses of native copper, with some rock attached, weighing from 115 to 2353 lbs. each, and ten barrels and eleven half-barrels of the same material in small pieces, were cast into the furnace with the following result:

Weight of the native copper, as received, was	36,100 pounds.
Nett weight of pig copper,	27,314
Leaving, in slug and waste,	8,786

It is seen that the yield was upwards of 75 per cent. of metal,—a result creditable to the furnace, and satisfactory to those interested in the mine.

THE COAST SURVEY.

The report of the Superintendent of the Coast Survey, reached us a few weeks ago, and it gives us much pleasure to notice in our number, the rapid progress which this great national work, is making under the direction of the present indefatigable and distinguished superintendent, Professor Alexander Dallas Bache.

This gentleman visited our city last spring for the purpose of personally superintending the operations and survey of the eighth and ninth sections of this great work extending from Dauphin Island to Galveston Bay.

We had then ample opportunity of witnessing the zeal with which he pushed the work in this important section of the Coast Survey, until the summer heat compelled him to go north, where he was engaged the remainder of the year on the eastern section.

The coast of the United States is divided into nine sections of nearly equal extent of shore line :

No. 1. From Passamaquoddy bay to Point Judeth.
2. From Point Judeth to Cape Henlopen.
3. From Cape Henlopen to Cape Henry.
4. From Cape Henry to Cape Fear.
5. From Cape Fear to St. Mary's River.
6. From St. Mary's to St. Joseph's Bay.
7. From St. Joseph's Bay to Mobile Bay.
8. From Mobile Bay to Vermillion Bay.
9. From Vermillion Bay to the boundary of Texas.

Up to 1844, the operations of the Coast Survey had only been extended to nine States, while now it embraces eighteen States, including three on the Gulf of Mexico.

In every section the methods are the same, so that the results brought to Washington are published in detached parts to meet the urgent demand for information, which the accurate system and frequent discoveries of the Coast Survey create.

The number of sheet maps and charts now published is sixteen; and in the course of this year at least five more will be added.

Although the most valuable results of the Coast Survey are the furnishing of accurate maps and charts, at first cost, the superior execution of which reflects great credit upon the gentlemen employed in this department by the government, yet these are not the only results obtained from year to year, which attest the importance of fostering this branch of public service in a commercial point of view.

The discoveries of Gidney's channel into New York harbor; of Blake's channel in Delaware Bay, the new shoal near the island of Nantucket, and a new channel of twenty feet at the entrance of Mobile bay, are among those not the least important that have saved to the commerce of the United States more than a thousand times the expense of making the Coast Survey.

We regret we have not space to bring to the notice of our readers all that has been accomplished in the eighteen States, we shall therefore be obliged to close this article by stating what has been done during the past year in the Mississippi sound. In this section a base line has been measured on Dauphin Island; the primary triangulation has been continued by filling up at stations not already occupied; the secondary triangulation has been carried westward to Cat Island and the subjacent shores. The topography of the entrance to Mobile bay, and part of the Island chain from Mobile bay to Lake Borgne, has been executed; the hydrography of the entrance to Mobile bay is being nearly completed, and that of Missis-

sippi sound north of the base is in progress. A survey of Cat island harbor for the accommodation of shipping and the British mail lime of steamers in connexion with the Mexican Gulf railway has been completed, operations too have recently commenced in Galveston bay and harbor. These taken together with the new channel round Dauphin island the still more important discovery of a deeper channel into Mobile bay, the establishment of a harbor at Cat island, are but the beginnings of more brilliant prospects for the local and general commerce in the Gulf.

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J. D. B. De Bow, Esq.

Dear Sir:—Knowing that all information relating to the cultivation of the cane, or manufacture of sugar, will be read with interest by very many of the subscribers to the Commercial Review, I annex extracts from a letter recently received from J. Balestier, Esq., our Consul at Singapore, who, ten years ago, opened a plantation on that island, after having resided many years in the West Indies. The different results from variety of soil, climate, and method of tillage, offer some plain deductions to practical men, and which may prove serviceable to all.

I remain respectfully yours, &c., L. B. S.

New Orleans, March 20, 1848.

"In Singapore, every thing is done by hard labor. I am the only one who has the plow in use, and it is drawn by three small bullocks of the country, or large Sydney horses, and, for the first time, an elephant has recently been put to that use, and he is a far better and more effective worker than the other animals.

"I will just run over our mode of cultivation, premising that our coolies are natives of China and natives of India, (Madras,) who are engaged for a year at three and three and a half dollars per month, but found in nothing. They work in the field from 6 to 11, A. M., and from 1 to 6, P. M.; Sundays, half a day only, and are allowed five holidays per year.

"The top pieces of the cane, after being gathered from the field, are first trimmed and then laid up and down, straight, in shallow pits, dug for the purpose in convenient places in the field to be planted, the old ridges of which have been previously pared down with hoes. After the pit is full of plants, the earth round the sides is raised, and the top surface is sheltered from the burning sun by a thick coating of mould, or mud, if to be had, and water, if needed, thrown on the mud twice a day. In ten or twelve days, every eye has sent out a fine shoot, and the plants are then taken out and carried in baskets, Chinese fashion, and planted in shallow drills, six feet apart, prepared also with hoes over the old drills. By this mode not a plant is lost, and in the forwardness of the young cane nearly a whole month is gained, which I should think would be a great gain in Louisiana, where the season is short. Six months after planting, burnt ground, and ashes, which have been prepared in and about the field, by clearing the old roots, leaves and grasses, are carried in baskets, and about two large handsful dropped from the basket on the end of the plant next to the young shoots; a month later, the grass and weeds in the drills are hoed, allowed to dry, and drawn against the plants, and covered over with mould. Two months later, the same operation is performed, which is renewed again when the cane is six months old, and then the first stripping takes place. The dry leaves are detached, made up into snug bundles, which are deposited between the canes, and covered over by a very high banking of mould to prevent the canes falling and not ripening. In twelve or thirteen months, they are fit for cutting, and are again stripped.

"Rattoons are treated precisely in the same manner, excepting that the

banks are removed from the roots, in order to allow shoots to come out freely, and they are fit for the mill in ten or eleven months.

"In my individual case, of course the plow greatly supercedes the hoe, but not to the extent it appears to do with you, and in this I should like to be instructed. Our soil consists of adhesive yellow clay, or of peat, and to be productive, requires a good deal of working. I find that one plant does full as well as two or more, and each stole consists of eight or ten good canes. My plants are not *planted*, but are laid *flat* in the drills, the eyes on either side. Our cane-juice marks from 9 to 10° of Beaume's saccharometer, and is very easily clarified with lime; but I merely use cold water, sprinkled over the boiling liquor from a watering pot, which causes the impurities to rise without injuring the color and the graining of the sugar, as lime does. I use cream of lime in the first place, and after filtration in a very unsatisfactory manner, use the watering pot.

"In this country, cane-juice has very little tendency to acidify, for the pans are never emptied at night, but the boiling carried on only while the mill works, during day light. On a recent occasion, my mill was stopped on a Wednesday, with a large stock of canes in the shed, which remained there until the following Tuesday, when they were ground for rum-making, as I thought; but to my surprise, the sugar from them was as beautiful as that usually made on the estate; the thermometer, meanwhile, from 76° at night to 83° at noon, as usual.

"Your people waste large sums in wood fuel, which they could save, if they would deposit, arranged in long ridges, say six feet high, their expressed canes of one year's grinding, which, if their coppers are properly set, will give them ample fuel for the next crop, and so on from year to year. Here we plant and make sugar the whole year, and six months after my expressed canes are carried under my bagass shed, I have far better bagass than that dried in the sun. If the locality is damp or wet, a grillage of timber raised a few feet will remove the difficulty of drying, for a free circulation of air is more necessary to make fuel than the heat of the sun.

"The newspaper reports of the production of sugar in your State, are certainly surprising, if true—6,000 pounds per hand, while, as by government report for the Island of Java, 2,440 men produced only 600,000 pounds of sugar from 4,000 acres of land. The laborers are paid one cent and a half of a Spanish dollar per day, but well can the Louisiana planter afford to pay $1,000 per hand, and find him beside, at the rate he produces."

EXCHANGE ON ENGLAND—VALUE OF A POUND STERLING.

As quotations of English exchange are so often looked to, and generally so little understood, the following table may be of service:

The value of a pound sterling in federal money,

At 7 per cent. premium, is		$4 75	At 9 per cent. premium, is		$4 84
7¼	"	4 76	9¼	"	4 85
7½	"	4 77	9½	"	4 86
7¾	"	4 78	9¾	"	4 87
8	"	4 80	10	"	4 88
8¼	"	4 81	10¼	"	4 90
8½	"	4 82	10½	"	4 91
8¾	"	4 83	10¾	"	4 92

When exchange is 10 per cent. and over, it will cause a shipment of specie, as the freight, insurance, and interest will not amount to so much as the cost of exchange. When exchange is 10 per cent. and under, English funds are not worth par in New York.

UNITED STATES IMPORTS, EXPORTS, TRADE, ETC.

From the last able report of Secretary Walker we make up the following most invaluable tables.

IMPORTS, EXPORTS, U. S., 1846 and 1847 to June 30.

	Exclusive of Specie.	Specie.	Total,
1846			
Imports - -	$117,914,065	$3,777,732	$121,691,797
Foreign exports -	7,865,206	3,481,417	11,346,623
	110,048,859	296,315	110,345,174
1847			
Imports - -	$122,424,349	$24,121,289	$146,545,638
Foreign exports -	6,166,039	1,845,119	8,011,158
	116,258,310	22,276,170	138,534,480
Domestic exports.			
1846 - - -	$101,718,042	$423,851	$102,141,893
1847 - - -	150,574,844	62,620	150,637,464

STATEMENT OF COMMERCE, REVENUE, AND POPULATION OF THE UNITED STATES FROM 1790 TO 1847.

Years	IMPORTS*	EXPORTS.		
	Total imports consum. in U. S.	Domest. Produce	For. merch.	Total imports
1790 - -	$23,000,000 $22,460,844	$19,666,000	$ 539,156	$20,205,156
1791 - -	29,200,000 28,687,958	18,500,000	512,041	19,012,041
1792 - -	31,500,000 29,745,902	19,000.000	1,753,099	20,735,098
1793 - -	31,100,000 28,990,428	24,000,000	2,109,572	26,109,572
1794 - -	34,600,000 28,073,767	26,500,000	6,526,233	33,026,233
1795 - -	69,756,000 61,266,796	39,500,000	8,489,472	47,989,472
1796 - -	81,436,164 55,136,164	40,764,097	26,300,000	67,064,097
1797 - -	75,379,406 48,379,406	29,850,206	27,000,000	56,850,206
1798 - -	68,551,700 35,551,700	28,527,097	33,000,000	61,527,097
1799 - -	79,069,184 33,546,148	33,142,522	45,523,000	78,665,522
1800 - -	91,252,768 52,121,891	31,840,903	39,130,877	70,971,780
1801 - -	111,363,511 64,720,790	47,473,204	46,642,721	94,115,925
1802 - -	76,333,333 40,558,362	36,708,189	35,774,971	72,483,160
1803 - -	64,666,666 51,072,594	42,205,961	13,594,072	55,800,033
1804 - -	85,000,000 48,768,403	41,467,477	36,231,597	77,699,074
1805 - -	120,600,000 67,420,981	42,387,002	53,179,019	95,566,021
1806 - -	129,410,000 69,126,764	41,253,727	60,283,236	101,536,963
1807 - -	138,500,000 78,856,442	48,699,592	59,643,558	108,343,150
1817 - -	99,250,000 79,891,931	68,313,500	19,358,069	87,671,563
1818 - -	121,750,000 102,323,304	73,854,437	19,426,696	93,281,139
1819 - -	87,125,000 67,959,317	50,976,838	19,165,683	70,142,521
1820 - -	74,450,000 56,441,971	51,683,640	18,008,029	69,691,669
1821 - -	62,585,724 43,696,405	43,671,884	10,824,429	64,974,382
1822 - -	83,241,541 68,395,673	49,874,079	11,476,022	72,160,281
1823 - -	77,579,267 51,310,736	47,155,408	21,170,635	74,699,030
1824 - -	80,549,007 53,846,567	50,649,500	18,322,605	75,986,657
1825 - -	96,340,075 66,395,722	66,844,745	23,793,588	99,535,388
1826 - -	84,974,477 57,652,577	52,449,855	20,440,834	77,595,322
1827 - -	79,484,068 54,901,108	57,878,117	16,431,830	82,324,827
1828 - -	88,509,824 66,975,505	49,976,632	14,044,578	72,264,686

* Exclusive of specie.

Years	Imp. specie.	Exp. specie *	Nett revenue.	Tonnage.	Population.
1790	- - - - -	- - -		478,377	3,921,326
1791	- - - - -	$ 4,399,473	09	502,146	
1792	- - - - -	3,443,070	85	564,457	
1793	- - - - -	4,255,306	56	520,764	
1794	- - - - -	4,801,065	28	628,618	
1795	- - - - -	5,588,461	26	747,965	
1796	- - - - -	6,567,987	94	831,899	
1797	- - - - -	7 549,649	65	876,913	
1798	- - - - -	7,106,061	93	898,328	
1799	- - - - -	6,610,449	31	939,409	
1800	- - - - -	9,080,932	73	972,492	5,318,762
1801	- - - - -	10,750,778	93	947,492	
1802	- - - - -	12,438,235	74	892,104	
1803	- - - - -	10,479,417	61	949,172	
1804	- - - - -	11,098,565	33	1,042,404	
1805	- - - - -	12,936,487	04	1,140,368	
1806	- - - - -	14,667,698	17	1,208,736	
1807	- - - - -	15,845,521	61	1,268,548	
1817	- - - - -	26,283,348	49	1,399,912	
1818	- - - - -	17,176,385	00	1,225,185	
1819	- - - - -	20,283,608	76	1,260,751	
1820	- - - - -	15,005,612	15	1,280,167	9,654,596
1821	$8,064,890	$10,478,059	13,004,447	15	1,298,958
1822	3,369,846	10,810,180	17,589,761	94	1,324 699
1823	5,097,896	6,372,987	19,088,438	44	1,336,566
1824	8,379,835	7,014,552	17,878,325	71	1,389,163
1825	6'150,765	8,797,055	20,098,718	45	1,423,112
1826	6,880,966	4,704,533	23,341,231	77	1,534,191
1827	8,151,130	8,014,880	19,712,283	29	1,620,608
1828	7,489,741	8,243,476	23,205,523	64	1,741,392
1829	7,403,612	4,924,020	22,681,965	91	1,260,798
1830	8,155,864	2,178,773	21,922,391	39	1,191,776 12,866,520
1831	7,305,945	9,014,931	24,224,441	77	1,267,847
1832	5,907,594	5,656,340	28,465,237	24	1,439,450
1833	7,070,368	2,611,701	29,032,508	91	1,606,151
1834	17,911,632	2,076,758	16,214,957	15	1,758,907
1835	13,131,447	6,477,775	19,391,310	59	1,824,940
1836	13,400,881	4,324,336	23,409,940	53	1,882,103
1837	10,516,414	5,976,248	11,169,290	39	1,866,656
1838	17,747,116	3,508,046	16,158,800	36	1,995,640
1839	5,595,176	8,776,743	23,137,924	81	2,096,479
1840	8,882,813	8,417,014	13,499,502	17	2,180,764 17,069,453
1841	4,988,633	10,034,332	14,487,216	74	2,130,744
1842†	4,087,016	4,813,539	14,260,770	95	2,092,391
1842‡	7,440,112	506,930	3,927,137	81	2,174,862
1843§	14,880,223	1,013,861	7,046,843	91	2,158,603
1844	5,830,429	5,454,214	26,183,570	94	2,280,095
1845	4,070,242	8,606,494	27,528,112	70	2,417,002
1846	3,777,732	3,905,268	26,712,667	87	2,562,085
1847	24,121,289	1,907,739	23,747,864	66	2,839,046

* Including American Coin.
† To September 30th.
‡ To December 31st, (3 months.)
§ January 1st to June 30th, (6 months.)

THE SHIP CANAL.

FROM THE ATLANTIC TO THE PACIFIC.

An Ode to the American People and their Congress, on reading the Message of the United States President in December, 1847.

Rend America asunder
And unite the Binding Sea
That emboldens Man and tempers—
Make the ocean free.

Break the bolt which bars the passage,
That our River richly pours
Western wealth to western nations;
Let that sea be ours—

Ours by all the hardy whalers,
By the pointing Oregon,
By the west-impelled and working
Unthralled Saxon son.

Long indeed they have been wooing
The Pacific and his bride;
Now 'tis time for holy wedding—
Join them by the tide.

Have the snowy surfs not struggled
Many centuries in vain
That their lips might seal the union?
Lock then Main to Main.

When the mighty God of nature
Made his favored continent,
He allowed it yet unsevered,
That a race be sent,

Able, mindful of his purpose,
Prone to people, to subdue,
And to bind the lands with iron,
Or to force them through.

What the prophet-navigator,
Seeking straits to his Catais,*
But began, now consummate it—
Make the strait and pass.

Blessed eyes that shall behold it,
When the pointing boom shall veer,
Leading through the parted Andes,
While the nations cheer!

* Catais and Zipango were the names given to the eastern part of Asia, towards which the greatest of navigators directed his westerly voyage, as Marco Polo had reached it by an eastward journey. Columbus having found that a continent debarred him from continuing his westward course, persevered in searching for straits which would allow him a passage to his wished-for Catais.

There at Suez, Europe's mattock
Cuts the briny road with skill,*
And must Darien bid defiance
To the pilot still!

Do we breathe this breath of knowledge
Purely to enjoy its zest!
Shall the iron arm of science
Like a sluggard rest!

Up then, at it! earnest people!
Bravely wrought thy scorning blade,
But there's fresher fame in store yet,
Glory for the spade.

What we want is naught in envy
And for all we pioneer;
Let the keels of every nation
Through the isthmus steer.

Must the globe be always girded
Ere we get to Bramah's priest!
Take the tissues of your Lowells
Westward to the East.

Ye, that vanquish pain and distance,
Ye, enmeshing Time with wire,
Court ye patiently for ever
Yon Antartic ire!

Shall the mariner for ever
Double the impeding capes,
While his longsome and retracing
Needless course he shapes!

What was daring for our fathers,
To defy those billows fierce,
Is but tame for their descendants;
We are bid to pierce.

We that fight with printing armies,
Settle sons on forlorn track,
As the Romans flung their eagles,
But to win them back;

Who, undoubting, worship boldness,
And, if baffled, bolder rise,
Should *we* lag when grandeur beckons
To this good emprise!

Let the vastness not appal us;
Greatness is thy destiny.
Let the doubters not recall us;
Venture suits the free.

* English, French, and Austrian engineers have actually set out to commence the ship-canal through the Isthmus of Suez.

Like a seer, I see her throning,
WINLAND* strong in freedom's health,
Warding peace on both the waters,
Widest Commonwealth—

Crowned with wreaths that still grow greener,
Guerdon for untiring pain,
For the wise, the stout, and steadfast:
Rend the land in twain!

Cleave America asunder,
This is worthy work for thee.
Hark! The seas roll up imploring—
"Make the ocean free."

AGRICULTURE OF FRANCE.

BY W. W. MANN, OF PARIS, FRANCE.

Agriculture is the basis of all the Arts. It lies at the foundation of human improvement: and its state among a given people may be said to afford the measure of its civilization. If one man by his sole labor can provide from the earth subsistence for three, two are left at liberty by a different application of their labor to procure for common use the comforts and luxuries of life: to practise and perfect, by exclusive attention to them, the useful and elegant arts; to effect the exchanges of commerce; to ameliorate political, civil, and social institutions: and to provide for the intellectual wants of man, by the cultivation of Literature and Science. A defective state of Agriculture in which every man, or nearly every man, is occupied with the care of supplying his own food, must abstract largely from the

* May I not for once bestow upon our nameless country this good and plain Saxon name, which was given to it by its first and Teutonic discoverers, long before Columbus and Vespucci? The poet, and all who desire to speak with fervor and pregnant brevity, stand in need of a name more comprehensive and concise than that which conveys the idea of a mere political relation. Above all, they stand in need of a name for the country, and not only of an official designation, however honorable or historical—a name around which cluster associations of the heart as well as of political and international transactions. When the heroic Nelson felt that he must animate his fleet to the highest pitch of battle-work, his signals did not proclaim "The United Kingdom of Great Britain and Ireland, or, His Majesty King George the Third, expects every man to do his duty," but the flag-ship signalled: "England this day expects every man to do his duty;" and in that brief dissylable, *England*, centred every thing that could stir the men and swell the breasts of officers—honor, wives, sweethearts, Parliament, newspapers, fields, farms, fox hunting, peerage, habeas corpus, brown stout, pudding, Christmas merriment, and all. Columbia, which had become in some sort the poetic name for the United States, is not sufficiently specific; and Alleghania, which has been proposed, has, besides its unwelcome similarity with alligator, a character of newness without freshness, like whitewashed walls or a shinning hat. It sounds *made*, and as if made, too, for a school geography; yet, why should we take even a book-name from that small and very partial ridge of hillocks? We have gone too far beyond. The name of Winland, on the contrary, is old, idiomatic, simple, and requires only to be resumed; it would adapt itself to all the needed grammatical formations (or, as the late Mr. Duponceau would finely have said, is malleable); it is brief, and seems every way sound.

number of persons engaged in these humanizing pursuits, and evidently retard in an equal ratio, the advancement of society.

The end of Agriculture being to increase the amount of useful products from the earth, its perfection consists in obtaining the greatest amount with the least cost. The actual productive capacity of an acre of land is probably unknown. Its maximum product has not yet been reached. Results surprising indeed have been attained: but in reference to none of them may it be averred with confidence that nothing more could have been effected. For agricultural improvement is lamentably slow in its progress. The application of science to an art which in the eyes of most farmers appears so exclusively practical is regarded with distrust, and scientific suggestions of most unquestionable utility are sneared at as the advice of book-farmers. Much must doubtless be put down to the account of want of education among the agricultural classes, to honest ignorance and prejudice, its child: much to a disinclination among farmers to disturb established habits, and depart from a time-honored routine under the reign of which they and their fathers have gotten along with tolerable comfort. "Let well enough alone," they say. These men who in full view of the railway which conveys to market with so much celerity and convenience the products of their neighbor, are themselves content to toil over the hills and stall in the mud of the ancient country road, "Mine fader haf been always travel along dis road and so I travels here too." But perhaps the chief cause preventing the prompt general adoption of improvements discovered and recommended by scientific men is to be found in the limited capital of most farmers, which, already charged to its full extent, is unequal to the expense in which the substitution of new methods would involve them. Thus, proposed scientific improvements which have notoriously passed from the doubtful domain of experiment and taken place among well ascertained facts, are rejected under the empire of that stern necessity which leaves the farmer no choice between immediate moderate returns which may be made to suffice, and the large returns which he admits would ultimately reward a change of system.

All these causes and particularly the last, owing to the minute subdivision of landed property, of which we shall have occasion to speak presently, concur to render the grand results of Agriculture in France much inferior to those of some other countries less favored by nature. Its territory is thrice that of England, its population double, its soil and climate more genial, yet the agricultural products of France are estimated at but one-third, perhaps only one-fourth those of England. The difference is astonishing and is due exclusively to the superior modes of tillage which obtain in that island, and which probably render it in certain localities where favorable circumstances combine, the seat of the most perfect agriculture which the world has ever witnessed. Statistical writers usually announce the agricultural population of France as forming three-fourths of the whole. But M. Chemin Dupontes who is quoted as the best authority upon this subject, states the actual number of persons engaged in agricultural pursuits to be 22,000,000, which is considerably less than three-fourths. It is calculated that the labor of each individual suffices for his own subsistence and leaves a surplus equal to the fourth or at most, the third of the subsistence of one other person. It appears too, considering the whole population, and the area of land under cultivation, that in the present state of agriculture it requires an average of 3 7-10 acres for the support of a single person. The department of the *North* and of the *Lower Rhine* which contain a much denser population than this would imply, form in fact no exception to the rule. In these departments notwithstanding their fertility, production is never equal to consumption, and they draw from abroad a portion of their subsistence. These are deplorable results and

in view of the demands of an increasing population, may well excite the serious concern of the patriot. Agriculture must improve, and exhibit vastly superior productive energy than at present, or France will become dependent, and year by year increasingly dependent, on foreign sources for her daily bread.

A glance at the map of France and a moment's consideration of its physical characteristics, will suffice to prove that this country has been richly endowed by nature and ranks among the most favored parts of Europe. Its northern extremity on the base of the Pyrenees falls in 42 deg. 30 min. N. lat. the northern beyond Dunkirk in 51 deg. 10 min. making in length, eight and a half degrees of latitude. Its breadth from long. 8 deg. 20 min. E. of Greenwich to 4 deg. 40 min. W. extends over thirteen degrees of longitude. This gives dimensions nearly square of 595 miles from north to south, and 550 from east to west, an area of about 205,000 square miles, or rather more than 130 millions of acres. The fertility of of its soil is hardly second to that of any part of Europe and its genial climate fits it for the growth of a rich variety of northern and southern productions.

Till late years only ill-directed and imperfect efforts had been made to ascertain the variety and aggregate amount of the agricultural wealth of France. Since the revolution of 1830 however, the old modes have been laid aside and a new method adopted, more tedious and difficult, but more efficient and satisfactory for furthering the real basis of agricultural statistics. The bureau of general statistics which was charged with the care of remedying this evil, addressed to the mayors, public officers, and the principal citizens of all the 37,040 communes of France, so many copies of a table drawn up on a simple and uniform plan, requesting them to fill the blanks with the proper information and return the table to the officer in Paris. By these means immense masses of local information were collected, which was submitted, first, for revision and verification, to committees of each canton: this being the next territorial division of France larger than the commune. Having passed through the 2,846 cantons of the kingdom it was submitted, for further arrangement and abridgement, to the 363 arondissements. Thence it passed into the hands of commissions in the 86 Departments from which it has been received, a completely digested and reliable body of valuable French statistics. This systematic plan was commenced in 1836, and the public has been for some time in possession of the results. Departmental inspectors of Agriculture are charged with continuing the work; it is their duty to keep the government in constant possession of important agricultural statistics. It is from this source that most of the figures in the present article will be drawn.

A distinguished writer, Lallin de Chateauvieux divides France into 8 distinct agricultural *regions*, viz: North, Northeast, Southeast, Central, West Central, Southwest, and the Lande or heaths. Before giving a rapid sketch of these *regions*, describing briefly their characteristics, their productions, and the modes of culture which prevail in them, a passing notice, must be taken of the minute subdivision of landed property which is, in a greater or less degree, common to all of them, and is every where attended with deplorable consequences to the general interests of agriculture. "It is," says the writer mentioned above, "the characteristic feature of the rural economy of France. It is the immense fact which curtails all ameliorating measures and all circumstances. It classifies the nation and impresses upon it an agricultural character which the efforts of commerce and the struggles of industry are impotent to remove." This division of the soil of France into 123,360,338 distinct parcels, belonging to about 11,000,000 proprietors, is the work of the French Revolution. Which of the great cardinal and saving ideas, political, religious, or social, upon the

wise comprehension of which rest the hopes of the human race, that was not seized upon and carried to wild extremity amid the excesses of that terrible reaction?—that did not become noxious and almost odious in the attempts which were made at practical development. Thus the doctrine that the interests of agriculture, and the welfare of the state would be greatly promoted by the breaking up of the feudal system, and the creation of a large class of free proprietors of the soil, was illustrated in France by morcelling the territory to the almost incredible extent above mentioned, and distributing it in ruinously unequal portions among 10,896,682 free proprietors. During the last ten years of the nineteenth century, national domains to the amount of $502,262,500 were sold. These were mostly estates of the church and of the religious orders, which, with the nobility, possessed, prior to the revolution, nearly the whole of the landed property. These estates were generally sold at very low prices, partly because not much confidence was had in the newly acquired titles: and partly because there were not many buyers capable of paying the full value of the land. The following table will present at one view, the distribution of territorial property in this kingdom at the commencement of the present reign, and partially disclose the magnitude of the evil complained of—an evil as great, perhaps, so far as the mere interests of agriculture are concerned, as the other extreme from which they so precipitately fled. Proprietors are divided into eight classes according to the amount of the land tax with which their properties are burdened. The four first comprise what are known as the *large properties* paying at least 200 francs ($38 50) annual taxes: the 5th and 6th classes, paying a minimum annual tax of 50 francs, ($9 62½) comprise the *middling properties:* the 7th and 8th classes charged with a tax of from one cent to $8 12½, comprise the numerous *small properties.*

Classes of proprietors.	Minimum of taxes.	Number of proprietors.	Average size of estates.	Total acres per class.		Acres.
1st clas .	$192.50	8,000	877¼ acres	7,018,000		
2d. "	96.25	15,000	444 8-10 "	6,672,000	Large properties.	42,816,500
3d. "	57.75	67,000	207½ "	13,902,500		
4th "	38.50	110,000	138 2-5 "	15,224,000		
5th "	24.06¼	220,000	86½ "	19,030,000	middling properties.	35,638,000
6th "	9.62½	480,000	34½ "	16,608,000		
7th "	4.81¼	3,900,000	9 1-50 "	11,500,000	small properties.	35,198,00
8th "	01			23,698,000		
		4,800,000		113,652,500		113,652,500

The above table however, exhibits very imperfectly the extent to which the morcelling system is carried in France. It does not explain the more than 123 millions of fractions into which the territory of the kingdom is divided. In fact the properties designated in the table as *large* and *middling* are themselves broken up into numerous small fragments: to the effect that a wealthy man's land lies so split up into small parcels, and often at such distances from each other, that if he deemed it necessary to have the whole under his personal supervision, his whole time would be taken up in moving from one portion of his estate to another. A man's property lies scattered over the whole arondissement so that one of the larger proprietors has in some portion of his estate almost every other proprietor of the department as his neighbor. The inconvenience of this state of things and its hindrance to productive cultivation are evident at a glance. Parcels at a distance may not be exchanged for others lying nearer home, because the expenses attendant upon the transfer of real estate, in the shape of stamps,

conveyancer's fees, recorder's fees, &c., are so onerous that for conveying a lot, yielding only two or three dollars a year, in raw produce, the parties would have to pay nearly twenty dollars in fees!

Side by side with the "large," "middling," and "small" *properties*, connected with and immediately flowing from this fragmentary condition of the French territory are observed different modes of cultivation known by the names of the *great, middling* and *small culture*.

The great culture as its title would imply is that which is conducted upon a grand scale on a large body of land. Numerous hired laborers are employed occupying separate quarters and having no connection with the family of the proprietor. *The middling culture* is effected for the most part by the sole labor of the farmer and his family. The hired laborer however, is occasionally called in. A single plow is seen upon the farm; but no division of labor takes place. *The small culture* is carried on without the use of the plow, by the manuel labor of the farmer and his family.

Taking no note of the woodlands, the following is given as the proportion in which the land is distributed among these three systems of cultivation.

				Acres.
Small culture.	To the cultivation of the vine	Acres	13,344,172	40,452,611
	Mountainous districts	"	11,120,144	
	Very small properties	"	15,988,295	
Middling culture.	Estates taxed at from $4.81¼ to 9.62½	"	13,344,172	52,882,460
	Farms cultivated by *metayer*,*	"	35,831,574	
	Cultivated by small parcelling farmers	"	3,706,714	
Great culture		"	15,148,107	15,148,107
				108,483,175

We are now prepared for a rapid glance at the 8 grand *agricultural regions* into which Lullin de Chateauvieux divides the surface of France. It shall not detain us long from the presentation in tabular form of the variety, amount and value of the productions, which under the unpropitious circumstances to which we have been alluding they are made annually to yield.

The *Region of the North* opens a vast field for the growth of bread stuffs vegetables and the grasses. Its climate is moist and its soil generally of great fertility consists of sandy clays of no great depth, reposing for the most part upon chalk, pure or mixed with gravel, and sometimes upon sands and tertiary limestones. It comprises the *Paris basin*, an immense plain the elevation of which ranges from three hundred to a thousand feet. The region of the North is chiefly occupied by the *large properties* and is the chosen seat of the *great culture*. Shade trees and fences or inclosures are rare. Horses are exclusively used in rustic labors. Large farms at fixed rents are numerous. Long lines of apple-trees for the production of cider form one of the most striking features of this region, particularly as we approach towards the ocean on the northwest. Root crops and herbaceous oleaginous plants are largely cultivated. The extensive pastures of this region support, for export, horses of extraordinary size, strength and beauty, large flocks of merino sheep, and fine milch cows, but the oxen for labor are not considered of a superior race. The northern limit for the cultivation of the vine upon a large scale, passes through this region. The limit

* Farmers who pay no fixed rent, but half the annual product to the proprietor. *Metayer* from the barbarous latin *medietarius, medietas* (half.)

may be marked by a line commencing on the Rhine a little south of Strasbourg in about latitude 48° 25' N. passing southerly to Metz in lat. 49° 10' N., which is the most northern point, thence in the southwesterly direction through Paris in 48° 50' N. lat. passing near Chartres, between Alencon and Mans, to strike the coast a little west of Nantes, in lat. 47° 20' north.

Adjacent its position in France sufficiently indicated by its name, lies the *region of the northeast.* It is characterized by a great variety of surface, being composed in about equal proportions of hill and dale ; and a corresponding variety of soil. It includes the ancient provinces of Loraine, Bourgogne, and Champagne. The arid chalk plains which abound in Champagne, are abandoned to scanty pasturage and resinous trees. Its famous vineyards are on the right bank of the Marne between Chalons and Rheims. The productions of the forest exceed the bread stuffs in value. Horses and cattle are of a very inferior quality. Three-fourths of the farm labor is performed by horses and the other fourth by oxen and cows. Lands at all rich are never allowed to lie fallow. This region is further distinguished by the infinite division of landed property, and by the prevalence of the *middling* and *small* systems of culture. The most valuable productions are the Burgundy and Champagne wines ; potatoes, forming a large part of the element of man and beast and the oleaginous plants. Indian corn shows itself in the southern portion of this region as an important article of cultivation. Farther north it takes a very low place among agricultural productions. Barrenness is the general characteristic of the soil of this region.

The region of the Southeast presents a still greater diversity of surface, climate, soil and culture. Vast bodies of inferior land form its distinguishing feature. Agriculture is in a very low and languishing state. It is conducted chiefly by *metayers*, and except in a few of the more northern districts, altogether upon the systems of the small and middling culture. Horses are few and of very inferior quality. The labors of the farm are performed by oxen. It is the general practice in this region to allow the land to lie fallow every second or third year. Usually during this year the land lies quite idle, but in certain localities it is planted in clover. There is general tendency here to extend the cultivation of the vine wherever a proper exposure can be obtained, upon a locality at a sufficient elevation above the level of the sea. On dividing this region into two parts by the parallel of Lyons, 45° 46' N. lat. it is observed that the northern portion resembles in its agricultural features the regions already described, while the southern half is marked by the first appearance of the mulberry.

Region of the South.—In the immense amphitheatre formed by the region of the south called also the *olive region*, attention is attracted to an agricultural spectacle of an entirely novel character. Under the warm southern sun, over the surface of the well shaded soil, in the generally dry climate of the south of France, shrubs and perennial plants are seen to take the place of those of annual growth or mingling together with them in the same fields. Their valuable products, partaking more of the character of articles of commerce than of subsistence for the population, which can only be realized by the aid of funds advanced for larger or shorter periods, attract numerous small capitals from the cities ; and ease and plenty prevail. Natural meadows have disappeared and artificial meadows, which are subjected to the general system of rotation of crops have taken their place. This region does not produce sufficient wheat for its own consumption. Mules are employed for the plow, sometimes horses. Cattle are few and of mean stock, but asses and sheep are numerous and of an excellent kind. The sheep particularly under the influence of the climate and of an aliment more substantial than abundant, and well salted, are of robust constitution and furnish a very superior quality of meat for the table. They furnish be-

side the wool, the only milk, cheese and manure which are used in the country. Those in daily use upon the farms as well as the moving flocks, are employed for this purpose. Animals are rarely housed, and the enclosing them in folds is the only mode of manuring the ground. In the ancient province of Languedoc of this region, chestnut trees are very extensively cultivated. The mulberry and the vine are very important productions. It is here that the cultivation of the former attains its maximum of extent and its optimum of quality. The wines of this region are very strong and highly colored, destined for the most part for the distillery and exportation. The art of irrigation is well understood and generally applied here. Oranges, dates, in some favorable locations, lemons, olives, prunes and all dried fruits of all descriptions are furnished to commerce in large quantities from this genial region.

Region of the Center.—Agriculture is of a very slovenly description here, effected chiefly by *metayers*, under the "middling" and "small" cultures. The rural population is sober, frugal, and industrious, yet its agricultural contribution to the commerce of the kingdom, occupies the lowest rank. Every autumn a considerable portion of it emigrates to distant provinces, seeking employment during the winter, and returning home in the spring with their meager earnings. The chief productions of the region of the center are cattle and mules, which are raised for sale, the pasture on the mountains being of excellent quality and abundant.

Region of the Southwest.—A great variety of soil and production is offered in this division of France. The mulberry has almost disappeared. In the ancient province of Guienna, the cultivation of the vine is carried to the highest perfection. The most valuable wines of France are produced here. Bordeaux is the great mart. Its brandies of Armaguac are second only to those of Cognac. A large portion of the territory is devoted to the production of grain, among which wheat holds the first place, and Indian corn the second. Potatoes are produced in large quantities, and agriculture is skilfully conducted. The three species of culture obtain here. Rotation of crops is practiced, and with the best results. The plain of the Garonne is not so fertile as that of Flanders and some others, but the climate is better, and upon equal soil the crop heavier. Vineyards are cultivated for the profit of the proprietor by an overseer interested in the crop.

The Central Western Region.—Between the valleys of the Garonne and the lower Loire, bounded on the west by the ocean, extends a region whose inhabitants, thanks to its remote position, the insalubrity of its coast, the fertility of its soil, to its mild and equable climate, and its even surface, enjoy more largely than those of any other portion of France the quiet happiness of rural life. There, agricultural operations are conducted upon a scale equally removed from either of the noxious extremes observed in other regions, and long habits of friendly intercourse between the landlords and tenants have established amicable relations and terms of intimacy, which contribute to the happiness of both. The low price of provisions and the abundant production of the finest fruits, make living easy and comfortable. Beautiful meadows border the rivers and skirt the sea. Cattle of the finest form feed on the plentiful pastures of clover and sainfoin. They are raised with care and intelligence, and are a valuable article of export, being highly prized, both by the butcher and the farmer of other provinces, who would employ them in agricultural labors. This favored and happy portion of France is the *central western region.*

The last of the eight divisions remaining to be described, is the *landes*, or heaths. They occupy a broad belt of territory commencing near the center of France at about 46° north lat. and 2° of long. east of Paris, and stretching northwesterly to the ocean; comprising within their limits the cities of Moulins, Nevors, Bourges, Chateanroux, Blois, Rennes, An-

gers, Mans, Nantes, Vannes, and Quimper. The absence of lime or the predominence of flinty clay in the soil, renders this region comparatively sterile. It produces abundantly thorn, broom, and juniper. The inferior grains are raised in only moderate quantities, and impoverished cattle seek scanty pasture where meadows, neither natural or artificial, are met with. The various systems of culture pervade certain parts of the *landes;* but the barrenness of its soil, the bad state of its roads, and difficulty of communication with the capital, have placed this region, in an agricultural point of view, far in the rear. Sheep and cattle are raised in certain parts for the Paris market.

The price of land in France varies, of course, with locality and quality. First rate pasture land in Normandy brings 5,000 francs the hectare, (equal to $4 05 per acre, about.) In the *Sologne*, a portion of the modern department of the Loire et Oper, land sells at $4 per acre. Farms in the *Limagne*, (department of Puy de Dome,) one of the most fertile portions of the kingdom, fetch $2 90 per acre. Eligible garden spots in the central regions of France sell for $320 per acre; and farms located in the *landes*, or heaths, command an average price of $12 per acre.

In an official work on the statistics of the kingdom, published by the Minister of Commerce, the extent of the various soils of France is thus stated:

Mountainous regions,	4,268,750	hectares.*
Heath,	5,679,089	"
Rich mould,	7,276,369	"
Chalk, or lime,	9,788,197	"
Gravel,	3,417,893	"
Stony,	6,612,348	"
Sandy,	5,921,378	"
Clayey,	2,232,885	"
Muddy, or marshy,	284,454	"
Other sorts,	7,290,238	"
	52,768,600	"

Measuring the fertility of the soil of France by its production of bread stuffs, it is ascertained that that portion of it which is of the first quality, occupies about 8-25 of the territorial surface of the kingdom, and is found on the shores of the ocean, in the valleys of the rivers flowing from the Pyrennes, and in the great plateau which stretches toward the north, between the Loire and the sea; that land of ordinary fertility makes up 19-40 of the whole, and is comprised, for the most part, in the provinces of the east; and finally, that the positively barren tracts, counting in the general estimate for the whole rest, or 41-200 of the soil, belong to the central regions, from the Lozere to cape Finisterre. Five-sixths of the soil may be said to be productive, and one-sixth unproductive and incapable of amelioration, consisting of mountainous districts of downs, or being exclusively of chalk or flinty clay formation.

The following table presents at one view the most important of the agricultural productions of France, the extent of land employed in the cultivation of them severally, the annual amount produced, the average price, and total value. The results contained in this table are not all equally exact and certain. The authors of the statistical work from which it is taken, say that it may be with confidence relied upon in respect to the most important articles, to wit: the grains or bread stuffs; but that the amounts here given as the annual product of wines, brandies, ciders, are doubtless

* The French *hectare* is equal to 2.471143 of our acres—or to 2 1-2 acres, nearly, rather less—or to 2 47-100 acres, very nearly.

far below the actual amount produced. Waste during the winter, local consumption, and, above all, fraud, prevent compilers of statistics from arriving at any thing more satisfactory than approximations upon this subject. The cultivation of potatoes is so infinitely divided, as are garden vegetables generally, that nothing absolutely certain can be gathered respecting them. The number of mulberry and apple trees is also doubtful, because of the various modes of culture adopted, more frequently in long lines on borders and along waters, than in well defined orchards.

Productions.	Hectares cultivated.	Hectolitres* produced.	Av'ge price pr. hectolitre†	Total value.‡
Wheat, - -	5,591,520	69,694,189	15 fr. 95 c.	$211,000,000
Rye, - - -	2,577,254	27,811,700	5 " 95 "	59,258,548
Maslin, or meslin, -	910,833	11,829,448	12 " 20 "	28,834,070
Barley, - -	1,188,189	16,661,462	8 " 25 "	27,524,482
Oats, - - -	3,000,634	48,899,785	6 " 20 "	60,402,294
In. corn(maize)& millet,	631,732	7,620,264	9 " 40 "	14,359,417
Buckwheat, - -	651,242	8,469,788	7 " 25 "	12,277,728
Beans and lentils, -	12,391	241,151	8 " 35 "	437,788
Gard. vege's,pears, pulse,	700,000			43,100,000
Potatoes, - -	921,971	96,233,985	2 " 10 "	40,421,173
Beets, - - -	57,663	15,740,691	1 " 85 "	5,795,890
Cabbage, colza, -	173,506	2,276,363	22 " 45 "	10,225,349
Hemp (Killogrammes‖)	176,148	69,178,717		17,257,468
Flax (in Killogrammes)	98,241	36,875,401		11,501,443
Madder (in quintals,§)	14,676	160,340	58 " 25 "	1,868,670
Tobacco, - .	7,955	88,897	61 " 79 "	1,097,000
Artificial meadows,	1,576,547			40,753,034
Natural meadows, -	4,108,198			92,519,645
Fallow—land, -	6,763,281			18,457,180
Pasturages and heaths,	9,191,076			16,412,809
Orchards,nur'es, osieries,	766,578			
Olives, - -	121,229	167,330	136 " 10 "	4,555,280
Vines, - - -	1,972,340			96,000,000
Chestnuts, - -	455,387	3,478,582	3 " 90 "	2,705,638
Cider trees, - -		10,880,947		16,884,427
Forests, - -	8,804,551			41,320,105
Walnuts(Killogrammes)	6,744	1,503,591	1 " 17 "	348,108

Another summary gives the following results:

	No. of Hectares.	Annual value of production.
Area under cultivation. - - - - -	19,945,891	$711,602,826
" in orchards, nurseries, and osieries, - -	766,577	
" in meadows, pastures, landes, and fallow,	21,097,953	152,496,487
" farms, - - - - - - -	8,804,551	41,320,105
	50,614,972	905,419,418

* The French *Hectolitre* is equal to 22.00967 gallons English, or very little more than 2 5-6 of our bushels.

† In this conversion of French into American money, 5 francs is deemed $1.

‡ 1 franc equal to 19 1-4 cents. 100 centimes (c.) equal to 1 franc.

‖ 1 killogramme equal to 2.2045 lbs. avordupois, or nearly 2 1-5 lbs.

§ The French quintal is equal to 1.97 cwt.

THE PUBLISHING BUSINESS.

Chambers' Miscellany of Useful and Entertaining Knowledge. Edited by WILLIAM CHAMBERS. Boston: Published by GOULD, KENDALL & LINCOLN, 1848.

Information was never put in a more pleasing and attractive form than in the volumes of the Miscellany. There are many reprints of choice and short works, some of those that we have read in our youth, and then lost sight, but not memory, of. Such, for example, is the romantic adventures of Admiral (then Midshisman) Byron on the coast of Chili and Patagonia, after the loss of the Wager store ship. If any one has not read this narrative, we can safely recommend them to buy the number, and the reading of this single story will amply repay them. In the same number a rapid sketch is presented of that portion of Scotish history which is truly her heroic age, including the struggle of Wallace and Bruce against the English power, wielded by the first Edward; a period that inspired the peasant bard of Scotland with the noblest warlike lyric ever written. Other numbers are equally attractive; in one we get a reperusal of that strange poem of Coleridge, the "Ancient Mariner," with other of the musical and fanciful productions of the great metaphysical poet of the age. In the same number is an account of the war in Hayti, and the establishment therein of the anarchical polity of the negroes; but the most interesting, perhaps, to young people, is the paper entitled, Curiosities of Vegetation, a summary of the chief wonders of the vegetable world, and highly instructive for its admirable arrangement and clear exposition of the great laws which govern the being and growth of plants, and startling to those who have not travelled to the land of the palm and the banyan. This, and the wonders of geology, are worthy the brilliant genius of the author of the Vestiges of Creation. To the young we would especially recommend hese attractive works, in which utility and pleasure, wisdom and delight, are so rarely mingled.

Report of the Superintendent of Public Education in the State of Louisiana, 1848.

We expected this paper with great interest, arguing from the established reputation of Prof. Dimitry. It by no means satisfies this expectation. Too much haste is evident from the pages, and too little research. The paper affords but very few facts, and scarcely any thing determinate. In a subject so full of interest, something better surely could have been afforded. The style, at least, was susceptible of improvement. As the "head of the educational movement in Louisiana," the Superintendent would do well to take our suggestions in the good part they are offered.

The Renegade; a Historical Romance of Border Life, by EMERSON BENNETT, author of the "Bandits of the Osage." Cincinnati: ROBINSON & JONES. 1848.

We have been kindly furnished by the publishers with the proof sheets of the work before us, and commend it in all heartiness to the attention of the reading public. It will be found to be strictly what its name imports, a historical romance of early times in the west. At a period in the history of Kentucky, 1781, when hostility marked the meeting of the red man with the white, the scene opens. The history of Daniel Boone, and of many of those exploits through which his name has been handed down to us as identified with the population of that great and growing State, is sketched with a master hand, and colored with the tints of a delightful fancy.

It is encouraging to note the rapid improvement in the arts, and the high standard to which the west seems determined to elevate her literary char-

acter, no less than her commercial greatness and integrity. For Mr. Bennett, who is still a young man, and ambitious of the distinction to which, we doubt not, his intellectual qualities justly entitle him, we may confidently predict a high rank among the literary writers of our country.

The West, its Surface, Soil, and Productions, by JAMES HALL. Cincinnati: DERBY, BRADLEY & Co., Publishers, 1848.

Judge Hall has, in the volume before us, republished his "Notes on the Western States," written some years ago. These Notes have had great popularity, and embody an amount of information in relation to western life, &c., scarcely to be had in any other quarter. They have been revised, added to, and brought down to date, receiving therefrom a value which would not otherwise have attached to them in this progressive age. The connexion of the author with the Chicago Convention, of which he was a prominent member, doubtless induced him to the task.

The Western Lancet; a Monthly Journal, devoted to Medical Science. Cincinnati: ROBINSON & JONES.

The April No. of this excellent work is now upon our table, and fully sustains itself in the reputation it has acquired. Art. 1, by John P. Harrison, M. D., a "Clinical Lecture on Typhoid stage of Bilious Remittent Fever," will commend itself to the attentive perusal of the scientific. The 2d art. is a "Report of a case of Abscess in the Pregnant Uterus, occurring in the Commercial Hospital," by John A. Murphey, M. D. A valuable paper upon a "case of Eclampsia Parturientium, or Puerperal Convulsions," is furnished by Thompson McGown, M. D., of Hillsborough, Miss. There are besides much highly interesting matter upon the subjects to which the work is devoted, and we commend it to medical men generally.

The Secrets of Mount Echo, or Mother's Mysteries; an American Romance, by JESSE CONARD, author of "Stephen Morland." Cincinnati: ROBINSON & JONES. 1848.

This novel is the continuation of a series of original works by native authors, which the publishers propose to offer to the patronage of the reading public, more especially in the west and southwest, and of which the successful novels of "The Victim of Intrigue," and "The Bandits of the Osage," were the pioneers. Past experience justifies us in believing that there is an abundance of literary taste in this section of the Union to sustain the publication of western efforts possessing undoubted merit. The Secrets of Mount Echo will be found to possess much literary merit. It combines a pleasant style with strong dramatic interest. The locality of the romance is one crowded with colonial and revolutionary tradition. The homestead of the renowned Gen. Anthony Wayne, the battle ground of Brandywine, the scene of the massacre of Paoli, are all points of interest to the American reader, and will not fail to invest the story with additional attraction. The novel is issued in cheap form, making 122 pages, large octavo, printed on good paper and clear type.

Moena, and other Poems, by THOMAS S. DONOHO. Washington City. We are much pleased to see the poetry of our early friend in such an elegant style. The greatest eulogy we can bestow upon the native offsprings of the poet, is to say that the gems are worthy of the casket containing them. When anonymously published, we know of no more frequently copied verses than those in this volume; and we doubt not that the collection will be at least as well received by a discerning public. Embraced in it are the combined attributes of a high practical talent, a sound judgment, and a good heart.